DECEMBER 1954

American Engineer

RP

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● **ENGINEERS AND THE LABOR LAW**

By Carroll D. Kearns,

Member of Congress

. . . *Also*

eed for Inter-Professional Relations

Max H. Foley, P.E., and Fellow, AIA

●

Engineering Is "Number One" At Motorola

●

An "Engineering Look" At the New 84th Congress— The Latest Information

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American Engineer

DECEMBER 1954

Volume Twenty-four, Number Twelve

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—Robert Moses

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ADVERTISING INFORMATION:

R. A. Oliver, Advertising Director
American Engineer, 1121 Fifteenth Street, N.W., Washington 5, D. C.
Telephone: ADams 4-1622

NEW YORK:
Austin LeStrange Co., Inc.
420 Lexington Avenue
New York 17, N. Y.
Telephone: MUrray Hill 5-3277

CHICAGO:
LeStrange Co., Inc.
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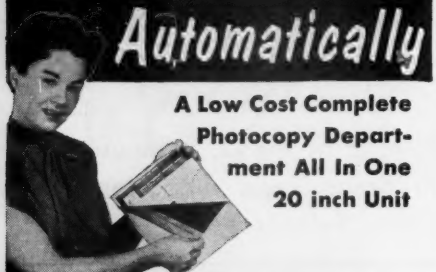

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Letters to the Editor

Chiles Article . . .

Dear Editor:

As an engineer who is interested in preparation for management, I want to thank Mr. H. E. Chiles, Jr., for the very concrete and detailed advice contained in his article, "The Vital Shift." His readiness to share the knowledge which he had gained the hard way is in the true spirit of professional responsibility.

I am sure that Mr. Chiles will be glad to know that some of the obstacles to the executive viewpoint which had once been inherent in an engineering education have been or are being eliminated.

For example, at The Cooper Union School of Engineering, from which I was graduated about seven years ago, it was stressed throughout the curriculum that:

1. Human error cannot be eliminated. It can only be alleviated or accounted for.
2. Solutions of engineering problems are not always based on rigorous proof. Many solutions are accepted simply *because they work.*
3. The answer to a problem may be 2.175, 2.2, or just 2, depending on the requirements of the situation and the accuracy of available data.
4. Understanding of and cooperation with superiors, co-workers, and subordinates, are essential in every position. The curriculum contained a number of humanities courses designed to improve the student's understanding of human relations.

Consciousness of the human factors prevails at the professional level as well. The New York Chapter and a number of other chapters of the Society offer to their members a course in Professional Science which has been defined as "The application of the science of the humanities for success in business." One of the objectives of this course is teaching the art of dealing with people.

With the guidance and educational opportunities available to engineers today, any engineer can make "The Vital Shift," provided he has the desire and ability to learn.

HARRY HERMAN, P. E.
New York, N. Y.

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More 'Vital Shift' . . .

Dear Editor:

It is with interest that I read the article in the October issue of the AMERICAN ENGINEER called "The Vital Shift," by Mr. Chiles. Can it be that Mr. Chiles does not know why this vital shift is so difficult to make? I have always believed that engineering at the professional level was an integral and necessary part of management. If we as engineers are not management then we must be labor and perhaps it is unionization that we need.

Mr. Chiles speaks of the engineer who will not make a decision without all of the facts in their proper place. The engineering work that I have done required that we make decisions with the available facts. I am getting sick and tired of hearing that the trouble with engineers is that we are not practical. How do we get things done then, if we are not practical? It is usually management who comes to the engineer and asks that a project be completed without time to wait for a complete design job and with material in short supply. The purchasing department cannot make substitutions nor can the construction department or contractor make intelligent changes without help from a professional engineer. In other words the practical man is the engineer, he is the man who gets things done so why not give him a little credit?

The thing that is difficult in making the shift to management is that management will not recognize the fact that the engineer can do a good job if given the chance. His whole career is based on making managerial decisions from the day he leaves school. How often will management argue with the legal department on a fine point of law? Yet these same men, without benefit of engineering education, will not hesitate to tell the engineering department how to build a job.

I made the shift from engineering to management and found that the problems were not concerned with dealing with people but with management.

W. B. JARZEMBSKI, P. E.
Tulsa, Okla.

Fluoridation . . .

Dear Editor:

. . . I can agree with the premise that we, as professional engineers, are obligated to accept the judgment of other professional people in their own particular field. (See **Fluoridation, Professional Postscripts, August and September, 1954—Editor**) I agree to this when there is unanimous acceptance of a particular theory by the practitioners in the field involved. However, when there is not unanimity within the field, I think that it behooves us to avoid lending our names to endorsements. The endorsement of a program by a medical or dental society does not, of necessity, mean acceptance by all of the members. Unless we know how many of the members were polled and the numbers pro and con, we cannot say that a substantial majority was in agreement. The endorsement might even have been given in executive session without resort to the opinion of the membership.

Engineer Moody makes the following statement in his letter. "No physician or dentist has publicly or, to the best of my considerable knowledge, privately cast the slightest doubt on it (fluoridation)." In refutation of this statement I am enclosing a list of twenty-six doctors and dentists who have in recent months voiced their objections, publicly . . .

I believe that this should answer the inference that there are no members of the medical or dental professions who voice objections. It also points up my statement that the Public Health Service does not tell the whole story. Quite apparently, Engineer Moody has had access to their publications, as I have had, but has presumed that they contained the whole story. The Public Health publications do not say that the value of the program is questioned by reputable medical and dental practitioners. Nor do they give the findings of reputable research physiologists which are not always favorable.

I stand accused of being uncritical enough to accept statements without investigation. The statements which I have accepted have been those of recognized physicians and dentists, not of 'chiropractors and health or food faddists'.

As a further indication of the controversial nature of this program, I can do no better than to refer to the Congressional Hearing which was held on May 25, 26 and 27, 1954, in Washington, D. C., by members of Congress in re H. R. 2341. There is much testimony by those who favor public fluoridation and there is also much testimony by medically qualified people who oppose fluoridation. There is even testimony by an engineer from Massachusetts who, as a statistician, presents an analysis of the Health Department figures accumulated in the Newburgh-Kingston study. His testimony purports to show that the inferences drawn from the clinical data are not statistically correct; that the Public Health Department is reading into the data information which is not therein contained. I can do no better than to suggest that anyone genuinely interested in this subject obtain a copy of the minutes of this hearing. They certainly show a wide divergence of opinion on the part of those who should be in agreement if a program of such widespread consequence is to be adopted.

To go back to my original thesis, we have here a program which, although it may be endorsed by professional societies, is not endorsed by all of the society members. We, as a professional group, would do well to avoid lending our name to such a program until such time as it has gained the approval of the medical and dental professions, not of the societies alone.

EUGENE T. ROGERS, P. E.,
Yonkers, N. Y.

Investing . . .

Dear Editor:

I enjoyed very much the article by Mr. Funston on the fact that "Professional men rarely invest in the stock market" and I would like to comment that the reason they do not is because a man has to know two things in order to be that type of man. One has to be engineering-minded and one has to be a financial man; the combination is very rare.

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RALPH M. SHAW, JR., P. E.
Philadelphia, Pa.

(*Continued on page* 40)

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Professional News in Capsule Form

W. H. Wisely To Become ASCE Executive Director • L. L. Dresser Is Selected for Oklahoma Tech Hall of Fame • Georgia Tech Freshman Tell What Influenced Their Choice of School • Survey of Science News Reporting Is Launched • Fourth Scientific Manpower Conference Scheduled This Month • Other Items of Interest

William H. Wisely has recently been named executive director of the American Society of Civil Engineers and will assume his new duties in New York on a full-time basis after January 1, 1955. To take the new post, Mr. Wisely, who is also a member of the Illinois Society of Professional Engineers and NSPE, leaves the position of executive secretary of the Federation of Sewage and Industrial Wastes Associations in Champaign, Illinois.

The new ASCE executive is a 1928 civil engineering graduate of the University of Illinois. He is also a former employee of the Illinois Department of Public Health.

While living in Springfield, he served a term as president of the Capital Chapter of the ISPE. He is currently chairman of that State Society's Publications Committee.

* * *

Former NSPE President Laurence L. Dresser, prominent Tulsa engineer and civic leader, has been selected as the first member of the Oklahoma Institute of Technology "Hall of Fame," a new honor inaugurated for state engineers by the engineering school at Oklahoma A&M. A certificate of meritorious service was presented to Mr. Dresser by Edward R. Stapley, A&M dean of engineering, at the annual OIT Tenure Award banquet.

The Tulsa engineer's picture will be hung in the "Hall of Fame" area in the A&M engineering building, where the photograph of a new member will be added each year.

Selections for the "Hall of Fame" are based on activities in technical societies, honors of election, activities in professional circles, service to the engineering profession, and civic contributions and service.

Mr. Dresser, the first honoree, is also a past president of the Oklahoma Society of Professional Engineers.

* * *

The two top reasons out of 57 given by this year's freshmen for their attendance at the Georgia Institute of Technology were the scholastic standing of the Atlanta school (96%) and the outstanding courses offered in their chosen fields (92%), according to the results of a survey made by the Institute's Public Relations Department.

Next in importance in the attractions and advantages cited by the 1,078 freshmen was Tech's nationally-known job placement service, while the training of the faculty ranked fourth in reasons given for attendance at the Institution.

Questioned about publicity influences that led them to the school, the students placed the school's bulletins and catalogs first and newspaper and magazine stories second. The two main personal contact influences listed were students and alumni of Georgia Tech.

* * *

A survey to learn public reaction to science news reporting is being launched by the National Association of Science Writers and New York University under a $10,000 grant from the Rockefeller Foundation. The goal of the study is to make science news "more meaningful to the public and more accurate in its presentation of science facts and ideas," according to Hillier Krieghbaum, associate professor of journalism at NYU's School of Commerce, Accounts, and Finance, who will direct the survey.

* * *

The Fourth Conference on Scientific Manpower, sponsored by the National Science Foundation, the National Research Council, the Engineering Manpower Commission, the Scientific Manpower Commission, and the Engineering Section of the American Association for the Advancement of Science, will be held in Berkeley, California, December 28-29, in conjunction with the AAAS annual meeting. All ses-

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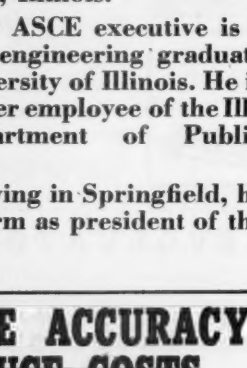

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sions of the conference will be open to the public.

* * *

Warren H. Brand, director of engineering and research at Conoflow Corporation, Philadelphia, has been elected president of the Instrument Society of America. A. A. Anderson, owner and president of Swissomatic Products of Southern California, and W. H. Fortney, assistant superintendent of maintenance and construction, Humble Oil & Refining Company, Houston, have been named vice presidents for two-year terms. Justus T. Vollbrecht, president of the Energy Control Companies of New York, Baltimore, and Philadelphia, has been elected to a second term as treasurer of the Society.

* * *

A group of twenty-nine scientists and engineers have recently joined to establish The American Nuclear Society. Preliminary plans for the organization were begun last December, but the formal establishment of the Society took place in Washington in October.

The group describes itself as "the world's first professional society of engineers and scientists representative of all scientific disciplines engaged in research, development and application of nuclear technology." One of its main purposes, as announced by the charter members, will be to foster the integration and advancement of nuclear science and technology through the interchange of information and ideas in all branches of research.

Membership will not be limited to U. S. citizens, and the new society expects to hold cooperative conferences with foreign scientific groups. It has scheduled its first technical conference for Pennsylvania State University, June 27-29, 1955.

* * *

The Institute of Radio Engineers has elected Dr. John D. Ryder, dean of the School of Engineering at Michigan State College, as president for 1955. Professor Franz Tank of the Swiss Institute of Technology, Zurich, has been elected vice president of the organization which has an international membership of 40,000 radio specialists and scientists.

(*Continued on page 8*)

MESSAGE TO AN ENGINEER THINKING ABOUT THE FUTURE—

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Briefs

(*Continued from page 7*)

Gifted students must provide leadership for industry if the United States is to maintain its position in the technological forefront of the world, according to Dr. Madison L. Marshall of the Research and Development Department of The Chemstranc Corporation, Decatur, Alabama.

Speaking before a recent regional meeting of the American Chemical Society in Birmingham, Alabama, Dr. Marshall called attention to the fact that Russia plans to double the number of its advanced degree graduates by 1956, and that if quotas are reached the Soviet Union will graduate nearly 54,000 in fields of technical and applied science.

Dr. Marshall praised the efforts of United States industry in providing assistance to students in the field of technological education, but he also emphasized the fact that the entire populace must be alive to the possibility that we are still falling short in the educational field at a time when the national security may be at stake.

Plans for the seventh annual Industrial Engineering Institute have been announced at the University of California at Los Angeles by Joseph D. Carrabino, lecturer in production management, who will serve as general chairman for the conference to be held at U.C.L.A. on January 28 and 29, and at Berkeley on January 31 and February 1, 1955. The Institute is designed to present new and important practical developments and applications in the field of industrial engineering and management, and it is planned to devote special attention to the problems of small business.

* * *

Carl W. Lemmerman of West Hartford, Connecticut, has been elected president of the National Noise Abatement Council. Mr. Lemmerman, a graduate of Case Institute of Technology, pioneered in methods of soundproofing aircraft test facilities. He is president of Industrial Sound Control, Inc., a Hartford firm.

* * *

The Secretary of State, John Foster Dulles, has recently announced the signing of an agreement with Belgium to facilitate the interchange of patent rights and technical information for defense purposes. The agreement was signed in Brussels by the Belgian Foreign Minister, Paul-Henri Spaak, and U. S. Ambassador Frederick M. Alger, Jr. It is the third of a series of such agreements being negotiated with the NATO countries, and with Japan, to be signed to date. The other signed agreements are with Italy and the United Kingdom.

One feature of the agreements relates to arrangements by which owners of patentable inventions placed under secrecy by one government may obtain comparable protection in the other country.

* * *

Jervis C. Webb, president and general manager, Jervis B. Webb Company, Detroit, Michigan, was elected president of the Conveyor Equipment Manufacturers Association during the organization's recent twenty-first annual meeting at the Greenbrier, White Sulphur Springs, West Virginia. R. C. Sollenberger was re-elected executive vice president and will be chief staff executive in the association's headquarters.

Other officers are: Fred S. Wells, vice president, Stephens-Adamson Manufacturing Co., Aurora, Illinois—vice president; R. B. Maas, president and general manager, Screw Conveyor Corporation, Hammond, Indiana—secretary; and E. E. Boberg, sales manager, Standard Conveyor Company, North St. Paul, Minnesota—treasurer.

* * *

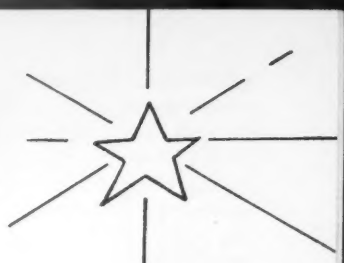
The Standards Medal of the American Standards Association has been presented to John Gaillard of New York, mechanical engineer with the Association and well-known authority in industrial standardization. A native of Holland, Dr. Gaillard is also the author of several books in the standardization field and a lecturer on industrial standardization at Columbia University.

Thomas D. Jolly of Pittsburgh, vice president in charge of engineering and purchasing for the Aluminum Company of America, has received the Association's Howard Coonley Medal. Mr. Jolly is also a past president of the ASA.

The awards were presented during the 36th annual meeting of the Association held at the Hotel Roosevelt in New York City, November 15-17.

(*Continued on page 23*)

Peace on Earth



But civilization does not decline and fall while the people still possess dynamic creative faculties, devotion to religious faith and to liberty. The American people still possess these qualities.

HERBERT HOOVER

The power we now hold in our hands is not evil in itself. On the contrary, the energies of nature are of God's creation. They are good, and it is good for us to have unlocked the secret of their use. Everything now depends on the way in which we use them. We can use these new energies to lead us forward, not indeed into some new garden of Eden, but at least into a more tranquil, human, prosperous, ordered world. Or we can use them to drive us backwards into the primeval chaos. It is for us to choose.

THOMAS E. MURRAY, P.E.

In the time dimension, survival depends upon the balance we maintain; strength is catabolic without wisdom for direction, and the sermons of Christ become as essential as the steel of Bessemer to our power.

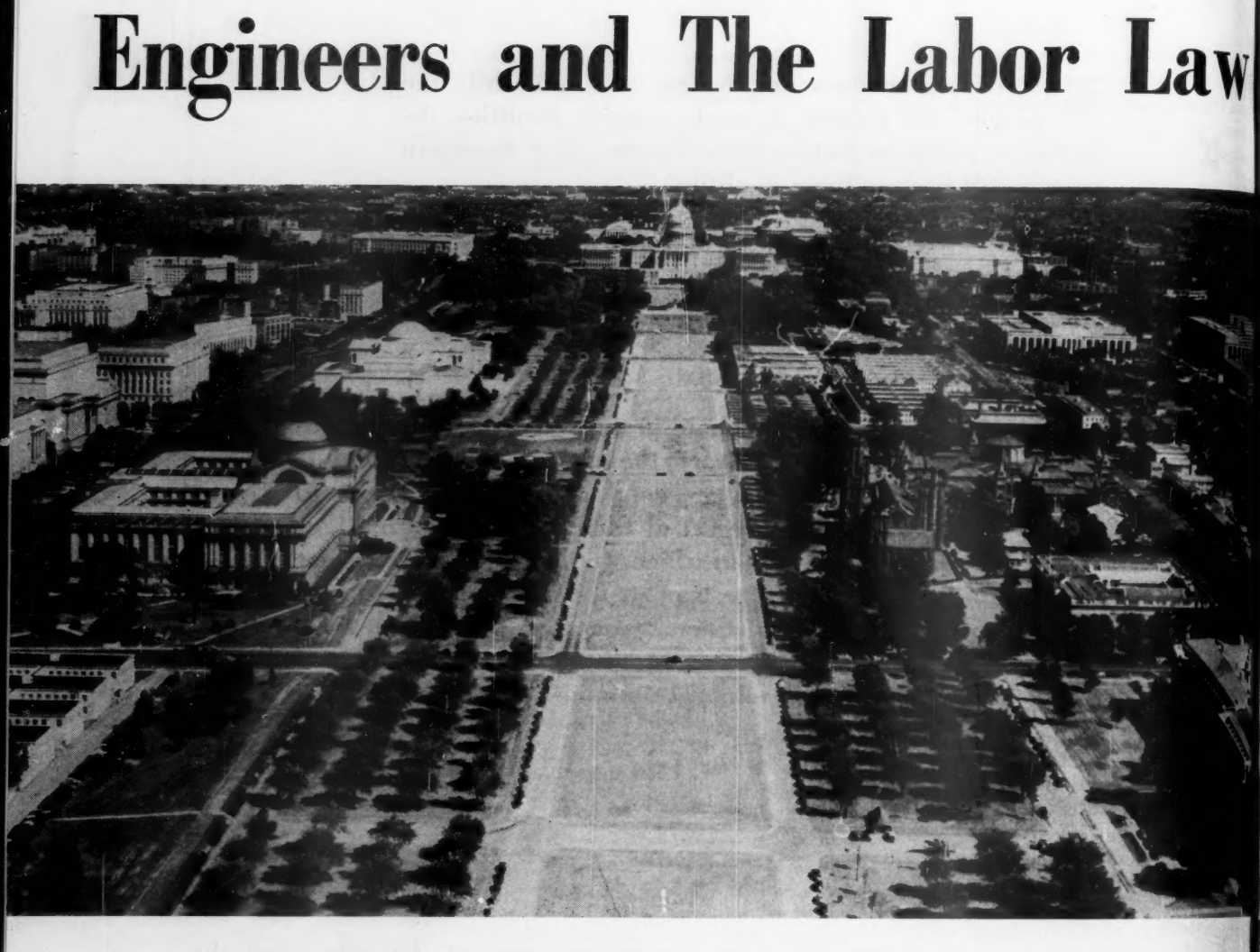
CHARLES A. LINDBERGH

Christmas 1954

By CARROLL D. KEARNS

Member of the U. S. House of Representatives from Pennsylvania

Engineers and The Labor Law



On June 2, 1953, I introduced into the House of Representatives a bill which was given the number, H. R. 5504, and more generally has been referred to as "The Kearns Bill," or "The Freedom of Association Bill."

Since that time I have heard from many professional engineers by mail and in person, and I have been learning a great deal about the engineering profession. During this period of my "engineering education," I have come to realize that in meeting the standard established by the Taft-Hartley Act of maintaining full production of articles and commodities so that we may be prosperous and strong, we have not yet fully recognized the interests of professional people. The engineering profession, in particular, is an essential element in our national productivity, for without the brains and ingenuity of our professional engineers in industry we would be far behind in the development of new products and processes, new and improved weapons of national defense, and the other sinews of our economy which serve and protect the American people.

Engineers may wonder why I happened to intervene in behalf of the industrial relations-legislative interests of the engineering profession. The first answer to that is that ever since I came to Congress in 1947 I have been privileged to serve on the House Committee on Education and Labor. One of the responsibilities of that Committee is to develop national labor laws which will be just as fair and impartial as human beings can make them in the interests of all the people. As you know, it was this Committee, together with its companion Committee in the Senate, that studied the defects of the Wagner Act and developed comprehensive amendments to that basic labor law so that favoritism and special privilege would be eliminated so far as possible—whether the advantages were on one side or the other.

The new law, which was enacted in 1947, popularly known as the Taft-Hartley Act, embodied many far reaching changes in the national rules governing labor-management relations. One of the reforms achieved in the new law of special interest to the engineering profession was the incorporation of a new provision which, for the first time, insured professional people against being submerged into non-professional unions against their desires.

We directed that those who are defined in the law as "professional employees" should be given the right to determine their own destiny in union representation questions by being placed in a separate voting group.

This had not always been done in the past, and very often professional engineers and other professional employees found themselves outvoted as part of a larger group including production, clerical and other non-professional employees. The vote of the professional employees was often meaningless in the face of the larger voting strength of employees with different backgrounds, interests and aspirations.

THE right of professional employees to determine their own fate in union representation matters is firmly planted in the law and I am confident that this provision will be retained in the future, even though some labor leaders have told us that they find it objectionable from their standpoint. You, of the engineering profession have a responsibility also to protect and defend your hard-won gain in the face of such criticism. I am certain that the professional engineers making up the National Society of Professional Engineers will tell their representatives in Congress of their support in this matter.

A second reason which has led me into taking an interest in the industrial relations problems of engineers is that with the passage of the Taft-Hartley Act our job was not done. We realized then, as we do now, that in a field as volatile and ever-changing as labor-management relations an answer is never final. It has been our duty to continuously study the Taft-Hartley Act in operation, analyze the cases decided under it, pick out weak spots and try to define changes which would make it a stronger and fairer law. In the course of this study I came to realize that one of the needed changes peculiarly involved the professional personnel in industry, and particularly in the engineering profession, because so many professional engineers are employed in industry compared to the other professions.

The nature of your particular problem in this respect is, unfortunately, somewhat complicated even though the solution proposed in my bill contains only a few words. I venture to analyze it here—with readers who are more expert than I, certainly, in engineering matters—because it is essentially a legislative situation.

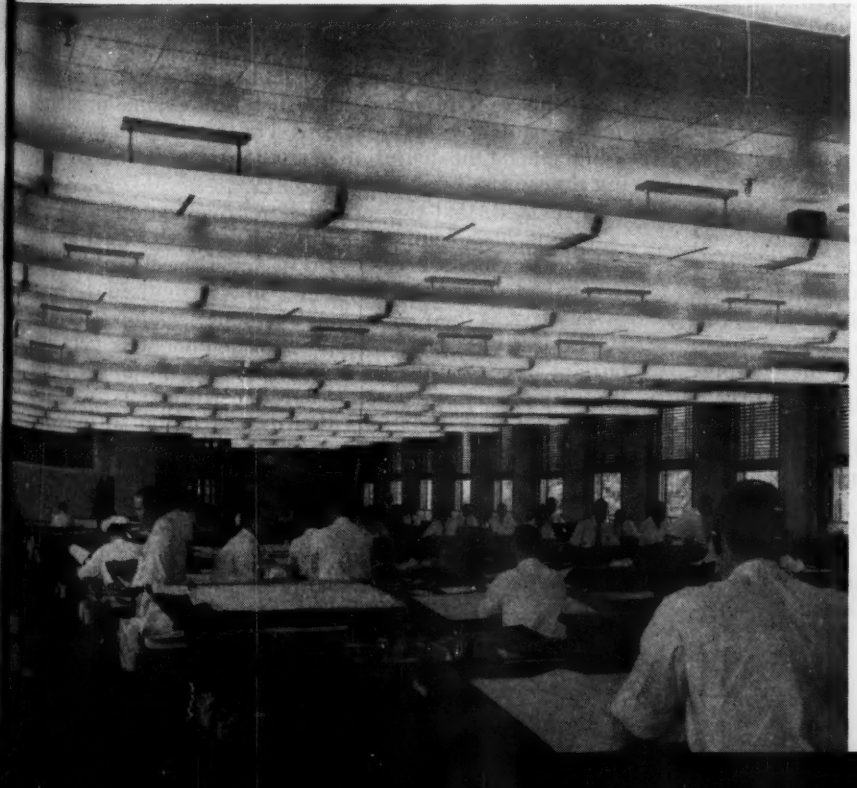
The nub of the situation is that the basic labor law, starting with the Wagner Act and continuing in the Taft-Hartley Act, establishes two basic groups in the governing of labor-management relations. First, there is the employer or management group, including supervisors as defined in the law. Next, there is the employee group which is everyone else. Now, we have said that the employee group should have the right to form unions of their own choosing and to engage in collective bargaining with the employer or management group. There are many detailed rules to control this bargaining within the bounds of fair play and respect of the rights of each other. Engineers who are in the employee group have the same right to engage in this type of activity as other employees, and, I should point out, that like all other employees they have the legal right to refrain from such activity if they so desire.

Obviously, some engineers in industry are in the employer or management group and others are in the employee group. And here is where the problem first clearly emerges. It has always been generally assumed that in the case of professions we do not recognize the idea of competing groups. One of the marks of a profession is a sense of homogeneity or "oneness"—not a splitting into differing factions.

BUT this idea of professional unity does not always work out in practice when applied to industrial relations under the Taft-Hartley Act. If the engineers in the employee group want a union they can have one, but they cannot include the engineers in the management or employer group —even though in many cases two professional engineers working side by side, or in close physical or professional relationship, are in the different groups I have mentioned. If they do not want a union they need not have one and in that case they may be cut off from having any form of organized communication with management on a professional level by exchanging ideas, making suggestions, improving the efficiency of their operations, and in other areas of professional cooperation.

As you know, Congress has always insisted that labor unions should be free of management domination or control—a labor union is entitled to represent the views of the employee group and management is not allowed to use that group for its own purposes by making it a front for its own views.

Some engineers in industry have thought that the solution to their problem was to have an organization including all the engineers in the company or plant which would



The author points out that the right of professional engineers to determine their own fate in union representation matters is firmly planted in the law. All engineers have a responsibility to protect and defend this legislation.

The Society feels that the individual judgment required of the engineer is not compatible with unionization.

not engage in collective bargaining—would not be a union in any sense—but which would serve the purpose of providing a medium of effective communication among all the professional engineers, and with management as well. Whether this is a sound idea or the best way for engineers to tackle their problem is an internal engineering profession question upon which I need not express any opinion. The point is that a substantial number of persons in the engineering field desire such a method and there is no reason they should not have it insofar as the law is concerned.

In view of what I have already stated, however, you probably perceive the complications. Such organizations are not truly "labor organizations" as defined in the law, from the standpoint of their intent or purpose. But the law specifically defines "labor organizations," as including:

> "any organization of any kind, or any agency or employee representation committee or plan, in which employees participate and which exists for the purpose in whole or in part, of dealing with employers concerning grievances, labor disputes, wages, rates of pay, hours of employment, or conditions of work."

It is what the organization does that counts, not what its intent is or what its constitution and bylaws say it intends to do. If such an organization, for instance, should engage in discussions between the employee engineers and the management engineers, either within the organization internally, or in more formal discussions with management, about rotation of professional personnel, job training programs, professional rating systems, or other subjects of that type, it might conceivably touch on those things which are within the functions indicated for "labor organizations." In that case it could be held to be a labor organization, legally. This would not be too disturbing by itself, but you will recall that I mentioned that the law prohibits management from participating in or influencing the organization and administration of labor organizations.

You will also recall that professional organizations of the type I have mentioned include both "management" engineers and "employee" engineers. This two-way affiliation could, then, be the basis of a charge that the company was dominating or interfering with a "labor organization" by the membership in and participation of management personnel.

I am sure that you have noticed that I have been analyzing this problem in terms of "may," "could," "might," etc. I have had to do that because there are many unsettled points in the question at present. Nevertheless, one definite fact is that industry does not relish being faced with an "unfair labor practice" charge under the law. Such a charge is expensive to fight, time-consuming and not the best public relations even if the company successfully resists the charge. As a consequence we find the professional organizations handicapped due to the understandable reluctance of management to fully and openly cooperate to the extent contemplated in the professional non-bargaining relationship.

On the basis of information presented to me, it seemed that a solution to the problem could be achieved by having the law make it quite clear that such professional organizations are not labor organizations. The legislation I proposed would amend the definition of a labor organization by adding the words:

> "Provided, that the term 'labor organization' shall not include organizations of professional personnel as defined in section 2 (12) of this Act if the Board has not certified or the employer has not recognized a representative as their representative under section 9."

The last part of the proposed amendment is very important. It means that the proviso would not apply if the professional organization secured certification from the National Labor Relations Board as a union so it could engage in collective bargaining under the protection of the law, or if the organization engaged in collective bargaining without securing an NLRB certification which is not required if the employer willingly recognizes a collective bargaining group. In short, the amendment would permit the professional organization to refrain from collective bar-

(*Continued on page* 28)

Daniel E. Noble, professional engineer and vice president of Motorola, Inc., demonstrates the aircraft "Quik-Call" selective calling equipment (SELCAL) developed by his company. The system is a boon to airline pilots.

Here's Why

Engineering Is "Number One" At Motorola

PAUL V. GALVIN, president of Motorola, Inc., has said more than a few times that in his business philosophy, engineering ranks number one in order of importance.

A glance into the history of the company—which now advertises itself as the largest exclusively electronics manufacturer—will show that from the outset engineering played a major role.

It was just 26 years ago in 1928 that Paul Galvin and his brother, the late Joseph E. Galvin, started a business to make battery eliminators. Between them they had $565.00 and a short term lease on a Harrison Street loft in Chicago's near west side. Within a year battery eliminators had become obsolete with the introduction of the A.C. radio set. Suddenly in 1930 the big depression made the outlook for the little company rather bleak.

It was at this point in the company's history that engineering stepped into the picture. At a time when circumstances were threatening business, Paul Galvin started inquiring into every related field of what was then known as the radio industry. He heard about several engineers who built a radio into a car, and sold the gadget for about $300.

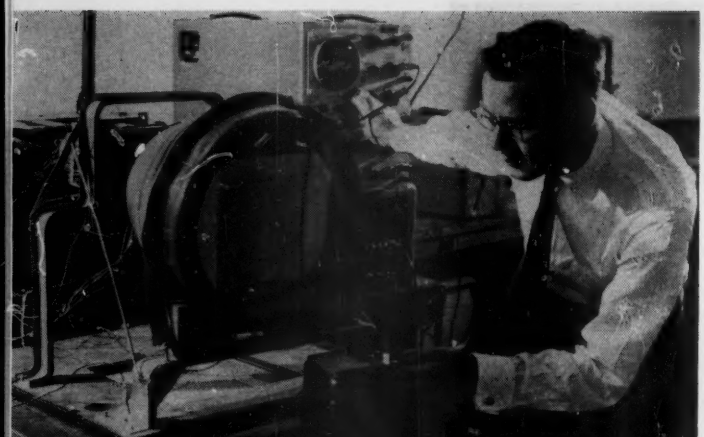
Mr. Galvin is not a graduate engineer; in fact he studied commerce at the University of Illinois. Yet, from the founding of Motorola, originally called the Galvin Manufacturing Co. his daily association with engineers helped him not only to understand them but to think the same way they did.

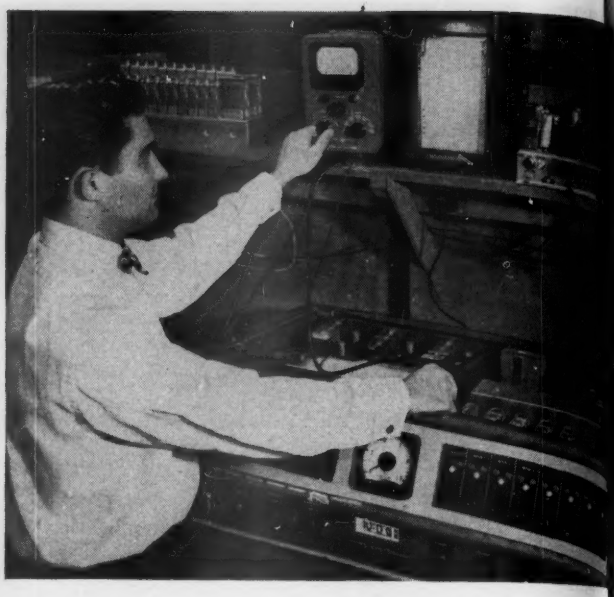
He saw the car radio as a sales "natural" if the engineering problems could be solved. He wanted a radio engineered so that the tuning apparatus could be mounted on the steering column, and engineered for mass production at a price within the reach of the family budget.

His approach resulted in a car radio model with a price of $109.50, one-third of the custom price.

MR. Galvin didn't stop with his first line of auto radios. He got ready for competition. Other manufacturers would jump in and to meet their competition his young company needed engineers.

In 1930 Elmer H. Wavering now the Engineering Vice President in Charge of Consumer Products joined the company. He was fresh from practical experience building and servicing radios in his hometown of Quincy, Illinois. Within five years auto radio was a separate division. Wavering was the manager. The company had started on its long road of successful diversification in electronics. It had entered the field of home radios and had even started making radio equipment for the police departments. On the strength of the quality of their radios the company was asked to produce a mobile radio transmitter whereby the police could reply to headquarters.





At left professional engineer, Don Parry, checks one of the new big-screen color TV sets (205 square inches of viewing area) in the factory color service school. Above is shown an engineer checking tone generators on Motorola's supervisory control equipment. Using this equipment, valves, motors, switches, etc., can be remotely controlled over many miles.

Again Paul V. Galvin went looking for an engineer. This time he was searching for a highly technical man. He had heard of a professor who had designed and set up an entire two-way communications network for the State of Connecticut.

It wasn't too long before Galvin persuaded Daniel E. Noble to leave the academic field and come to Motorola.

At first Noble came to Motorola with a leave of absence from the state university where he had taught electronics for seventeen years. It didn't take the six months leave for him to decide that he was where he belonged. Today he is Vice President in charge of the Communications and Electronics Division, and also heads the military electronics development activities of the company.

Each time Paul Galvin took a major step along the path of his growing concern he called on engineering talent.

Motorola now has ten officers including its president. When you look at the percentage—two of the officers are professional engineers—it's no different at the executive level than throughout the rest of the organization. At Motorola one in seven employees is actively engaged in some kind of activity related to engineering.

Chicagoland is the headquarters for 14 plants and research centers in the United States and Canada. The two-way communications division is next door to the administrative and consumer products engineering and chassis manufacturing centers. Two large buildings a few short blocks away handle parts supplier and sub-assembly operations. A huge bulk final assembly plant has recently been completed in suburban Franklin Park, Illinois. A few hundred miles to the south are three Quincy, Illinois, factories where most of the home, portable and auto radios are made. Motorola Canada Ltd. is located in Toronto. They manufacture consumer goods including television and home portable clocks and auto radios.

In Phoenix, Arizona, 80,000 square feet are devoted entirely to electronics research.

Just recently the company has announced a 5 million dollar expansion program which calls for the building of an engineering and administration headquarters on the north border of Chicago. Motorola occupies a total area of about 1½ million square feet of space.

IN professional circles Motorola means engineering. Motorola's research labs are working far into the future. With color TV here the new possibilities in that area alone are unlimited.

Since the advent of television loud crys have been heard that radio is dying. Yet for the past several years the industry has been selling up to 11 or 12 million sets and advertising billing at the broadcaster's level has gone up.

The engineering trend in radio is towards miniaturization. Engineers and designers are creating smaller, trimmer and more attractive receivers—with large speakers.

Leading the trend, Motorola has been using sub-miniature tubes and IF coils, and has engineered the first speaker innovation in the past 25 years, called the "inverted speaker." The magnetic field usually found in the rear of the speaker has been moved up front in the speaker's cone—thus the term "inverted." The result is a much thinner speaker, and its adaptability to give a larger speaker area than a radio of comparable size with a standard speaker.

Motorola has been a pioneer in the field of plated circuitry, a new process of manufacturing radio chassis. The firm's own exclusive technique is called the PLAcir chassis. In plated circuitry for radios the wires normally found running every which way on the underside of the chassis are eliminated. The wiring is replaced by copper lines plated on a non-conducting flat surface.

The company has recently announced an auto radio with true "Volumatic Control." By adding a new tube the company found the volume would not fade when a car nears tall buildings, travels under viaducts, through tun-

nels and across bridges. The new engineering feature automatically regulates the sound level of the audio amplifier in order to maintain a constant output of volume from the speaker.

After a station has been selected a volume is locked in place and variations usually found in tuning different stations while driving are eliminated. The volume remains the same on the whole reception band of the radio.

The communications and electronics division, includes all two-way radio, microwave, point to point remote supervisory control, power line carrier, telemetering, and automation devices. Also included is the research, development and production of military equipment.

THE company makes a complete line of two-way equipment. Models include mobile receiver—transmitter combinations in the ten to sixty watt classes and associated base stations with R.F. power outputs up to 5 kilowatts for operations in any of the mobile frequency bands. The line includes the famous Motorola "Handie-Talkie" F.M. two-way portable radiophones.

The field of microwave offers unlimited possibilities.

Many different types of messages can be sent via microwave at the same time. Today almost all newly established communications routes utilize the new means of sending and receiving messages. Radio impulses, teletype messages, television programs, and voice messages can be sent by microwave relay stations, up to 400 different ones at the same time.

The special feature of microwave is the elimination of wires and poles. Towers are set up about 35 miles apart and the messages are beamed from one point to another. Reduction of maintenance cost is the big saving for the user. Motorola built the first 1000-mile industrial relay system.

Since the first police car was equipped with radio, the company has been a leader in the mobile communications radio industry. AM and FM transmitters from ¼ watt to 5 K. W. outnumber all other equipment combined—2 to 1.

A building block technique is used in the production of 2-way radios. The reason is that a radio system can be customized for a particular client or operation, at a mass market cost. The transmitter, receiver and power supply parts are all made in separate blocks which can be matched in any number of ways. This method has saved military, industrial, and municipal buyers many hundreds of thousands of dollars.

The company is responsible for the development of the world famous Sensicon receiver design. It has patented capacitance discriminator, the noise compensated squelch circuit and the midget tuned cavity.

Motorola's multi-tone, multipulse Quick-Call selective signalling system has a wide application not only for calling the selected receiver, but also for remote supervisory control, remote signalling and for other conventional land line facilities.

LATEST development is the adoption of selective signalling for the air lines. Trade name for the new device is Airborne "Quick-Call." It is the first equipment of its kind to receive CAA type certification. Dispatchers on the ground can transmit a series of tones to radios in flight. Each aircraft radio remains silent unless the correct tone combinations are received. Safety is the greatest factor in the new development. Fatigue will be reduced since the pilots do not have to monitor their radios and hear a lot of unpleasant static while waiting for their own calls.

Six months before Pearl Harbor, Motorola had a Government contract for the famous Handie-Talkie radio. A year prior to that it had designed and built several two-way radios which were tested by a local National Guard unit. More than 40,000 of these units were produced for all the branches of the service during the war.

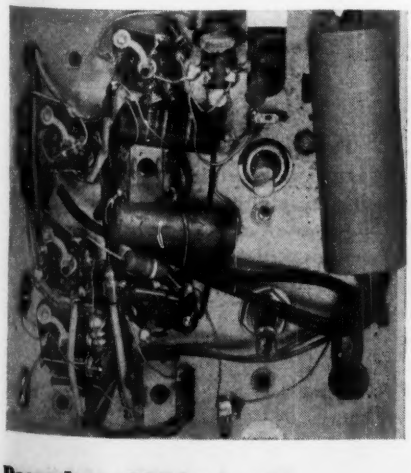
At the special request of the Army Signal Corps Motorola developed the "Walkie-Talkie" two-way radio for longer range communications. Another 50,000 of these were made.

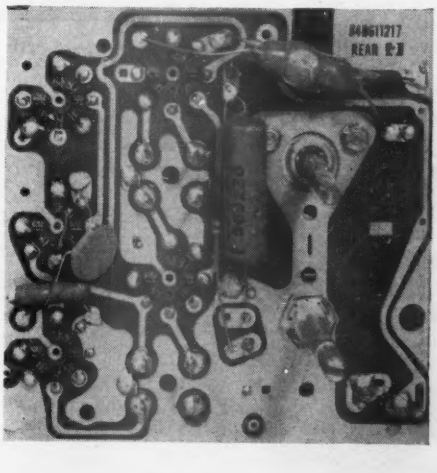
Although these two products were probably the most popular Motorola contributions to the war, there were many others including synchroscopes, the two-marker beacon for paratroop use, portable transmitters and receivers, a four-channel unit for field artillery and armored car use, radar research equipment, airborne range equipment and radar beacons. In addition the company delivered 35 million quartz-crystals during the war—more than half of all the quartz-crystals used in the entire war.

Since World War II research and production for the armed forces has continued. During the Korean conflict military operations took over an entire plant. Many types of communications equipment are still being produced for all of the branches of the service.

In 1954 Mr. Galvin predicted the electronics industry would sell 6 million TV sets with something less than 100,000 color sets included. Two-way equipment would again be on the upgrade from a volume standpoint. Military electronics would continue to be vital to the security of the nation, and he saw no letup in its development.

"Those who direct their efforts in the fields of electronics," according to Mr. Galvin, "will see in the next 25 years most of their advanced dreams crystallize into reality. The practical use of personal two-way communications will make its initial start, person to person from neighborhood to neighborhood, and the man to thank for this, as Motorola well knows, will be the engineer."—***End.***





Wafer-thin, the PLAcir chassis on the right is one compact, copper-plated panel with the wiring plated on it for life. Here it is compared with an ordinary radio chassis on the left that has a maze of wiring.

Working Together . . .

The Need for Inter-Professional Relations

By MAX H. FOLEY, P.E., and Fellow, AIA,
Voorhees, Walker, Foley and Smith,
Architects and Engineers, New York, N. Y.

WHEN I was asked what I would like to write about for the AMERICAN ENGINEER, I said "Engineers and Architects." That seemed to be a pretty broad subject for anyone to write about, but it is a subject close to me and what I mean by it is the close working relationship which should exist between the two professions and between all parts and all levels of each profession. I write primarily of the engineers who are engaged in some form of construction because that is the kind of engineering with which I am most familiar, but the principles apply to engineers and designers in manufacturing and processing, in utility work, in research, and in every kind of work.

To get the proper perspective as to the importance of the relationship between engineers and architects, one should think about the present status of the two professions in the world and especially in our country today. The engineer and the architect have assumed responsible leadership in every walk of life, every industry and every endeavor in which the knowledge and skill which they possess are needed. This applies to civilian life, to military works and to research which is a part of both.

IT IS no longer possible for political leaders, military leaders or any other kind of leaders to use the knowledge and skill and ability of architects and engineers anonymously and refer to them vaguely as "my staff." The intelligent world has progressed far beyond the point where that sort of thing was possible. At one time the impresarios had reached a point where they actually thought they were originating the designs which they picked from the minds of technical men. Then the wars came and grim actuality took the place of wishful fantasy and an engineer had to be an engineer and an architect had to be an architect or else confess that he wasn't.

Now the professions of engineering and architecture are preeminent and let's keep them that way. The only way to do it is to have the men in each profession cooperate with each other. Let's not let petty differences between the two professions allow laymen to come in between and run them both.

The old idea of the engineer who could not or would not speak in public—the fellow who was just a plain honest man of deeds and hated speechifying—is gone. A competent engineer will gladly stand up in any company and take care of himself and his profession with or against all comers. And the old idea of an architect who could show things on paper but could not possibly tell anyone how to get the stuff up on the walls or ceilings is gone.

Before the first World War, 40 years ago, I had the important job one day of taking a roll of drawings to a building which was nearing completion. I was standing under a highly ornamental and complicated ceiling with the foreman plasterer when the head designer came in, complete with a cane and spats. The foreman said to me in a loud aside "Look at him. He's looking at what he put on the paper and wondering how it got up there." Those days are gone, too, my friends. Architects and engineers both know what it is all about.

THE members of the two professions are after all the same kind of people—about equally educated and with much the same kind of professional standards. They complement each other in education and in ability to perform. The masters of design and of artistry in the middle ages and before had to be both engineers and architects. St. Peter's in Rome, the Pantheon and countless structures of the ancient and middles age eras were not the work of either architects only or of engineers only. They were the work of both—often in the person of one man.

We are in an age of specialization. Our work has become so complicated that even the mind of a genius cannot encompass all of its detail—but let us use specialization intelligently and in a cooperative way for the good of all.

I mentioned professional standards. There must, of course, be standards by which to measure whether a man can become and remain an engineer or an architect. But the really competent men in both professions know that no standards can ever take the place of professional ability and integrity.

Three outstanding seniors in architecture at Virginia Tech are shown inspecting a church design. In the years ahead they and their professional associates will learn the value of sound inter-professional relations.

There has been in my own state of New York a determined and persistent attempt to license corporations to act as engineers. I believe that this is wrong. The ability to be an engineer or architect is a personal ability and the license to practice either profession should be a personal license and not an impersonal corporative one. The moment a profession allows personal recognition and personal responsibility to be taken from its members, the profession will begin to go down hill. The New York State Organization has done a great job in fighting this legislation and the leaders of the state organizations and all of the chapters who have been foremost in the fight deserve the congratulations and thanks of the profession.

Every employer must realize that, when he employs a licensed professional man or woman, he is dealing with an individual who, by his own ability, has obtained a license to practice and who is ready to accept the responsibility and duties which that license gives him. And the employers should be glad that this is so.

ENGINEERS and architects in construction are operating in three ways. First, as individuals or firms in engineering only; second, as individuals or firms in architecture only; third, as combinations of the two—that is, as firms furnishing both architectural and engineering service. In the case of the so-called architect-engineer firms, there is less need to write about cooperation than in the case of the separate engineering and architectural firms—but there is some need of discussing cooperation even in combination firms, I can assure you.

I think it is important, in order to promote coordination and smooth operation in the design and supervision of building construction, that there be one person or firm in charge of each design job. It can be either the engineer or the architect, but don't make it a tie. I suggest that, when the engineering work predominates, the engineer should run the jobs and the architect work under him. And, vice versa—when the architectural work is the larger part of the job, the architect should be the responsible head and the engineer should work under him.

This system of having a job under one head does not need to and should not, in any way, interfere with the professional integrity and professional responsibility of either the architect or the engineer. It is merely a sensible way of making sure that a job will be administered and coordinated in the proper way so that it will be run without friction and interferences and lost motion for the general good of all. The architect will still perform all of his duties as an architect and the engineer will carry out all of his functions as an engineer, no matter who is the boss.

There is always the question of fees and this question can be a source of friction if it is not handled fairly and properly. Both engineers and architects should have and do have a feeling of responsibility for rendering the best service possible to their clients, and, at the same time, keeping their faith as professionals with the public. But there is no particular reason why they should starve to death while they are doing this because, if they do, they won't be around to serve either the client or the public.

IN many cases, undoubtedly in most cases, the agreement for design and supervision service is made with the client by either the architect or the engineer who then makes a subagreement with the other. And it is harmful and very shortsighted for either one of the professionals to make the best bargain he can with the client and then try to pay the other profession as little of the fee as possible. Standards as to minimum fees are being worked on continually and the fact that there are standards does have a good effect. But again, no standards will ever take the place of good will between the professions—good will which means that each one wants a fair deal not only for himself but for the other fellow.

I have been citing financial arrangements between clients and professional firms. There is also the all-important matter of the financial dealings between a professional firm and its professional employees. As I mentioned in connection with licensing, the licensed professional employee is a responsible individual, responsible for his own personal work both to his employer and to the state which licensed him. It would be a shortsighted policy on the part of any employer to try to exploit him. We are privileged to live in a country where the employee of today may well be the employer of tomorrow and vice versa. And nowhere is this truer than in the professions where a licensed man has the right to start his own office at the drop of a hat.

And those who do leave employment and start their own offices will immediately have a keener understanding of what it means to run an office, deal with clients and meet financial responsibilities. They won't be like the little old man who was going around a bank flicking a cloth at the marble one day while I was waiting to see the president, a dignified old gentleman, sitting at his desk. The man with the cloth said out of the corner of his mouth, "Do you see that man in there?" I said "Yes." He said, "Well, they tell me he gets $75,000 a year, and he doesn't do a thing all day, but sit on the back of his lap. And I know because I've been watching him."

THE spirit of cooperation needs to exist and does in many cases exist back in the technical schools—where the future architects and engineers should be taught enough of the technique and of the spirit and feeling of the other profession to be prepared to work as part of a team later. The idea of the architect being an imaginative creature without having his feet on the ground and the engineer being a realistic someone without imagination is, of course, all wrong. I had a grand old and wise professor once who said "There's no difference in theory and practice if they're both right." He thought narrowness in any profession was stupid and his feeling was that everyone was expected to be stupid once in a while but that no one was expected to make a career of it.

Again, this is the age of technical skills and planning. Never before in history have architects and engineers occupied so important a place in the general scheme. Never before have they had a greater opportunity to be of service to mankind. And one way in which they can render service to mankind, to their country, to their professions and to themselves is by working in complete cooperation with each other.—***End.***

About the Author . . .

Max Henry Foley is a graduate of Sheffield Scientific School, Yale University. He is a licensed professional engineer, a member of the New York State SPE, and also a Fellow of The American Institute of Architects.

Mr. Foley is a past president and governor of the New York Building Congress. He is chairman of the Apprenticeship Committee of the New York Building Trades and a member of the Engineering Board of The Port of New York Authority.

His extensive experience has included serving as managing partner in Trinidad for the firm engaged in the design of Army Air Bases.

Mr. Foley

1955-56 Nominees Are Announced

A WELL-KNOWN Ohio engineer—Allison C. Neff of Middletown—has been selected by the NSPE Nominating Committee to head the slate of candidates for 1955-56 office in the National Society as the nominee for president. Mr. Neff, who has long been noted for his activities in promoting the professional interests of the engineer, is vice president of Armco Drainage & Metal Products, Inc.

Vice presidential candidates also nominated by the committee include: Louis F. Frazza, Northeastern Region; Warner Howe, Southeastern Region; Virgil E. Gunlock, Central Region; Garvin H. Dyer, North Central Region; Robert J. Rhinehart, Southwestern Region; and L. R. Durkee, Western Region. As nominee for treasurer of the Society, the committee selected Russell B. Allen.

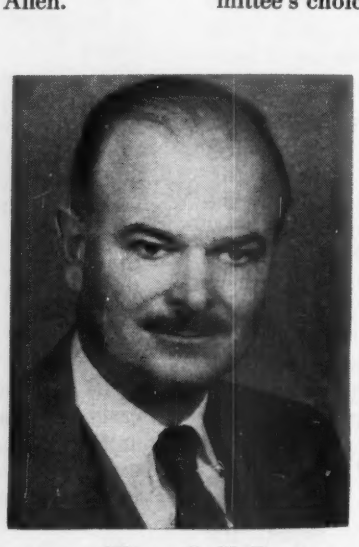
In announcing the names of the candidates, the committee also pointed out that additional nominations may be made by members as provided in the Constitution. Other names will be placed on the official ballot upon petition of fifty members, all in good standing, provided such petition is received at least one week prior to the printing of the official ballot. The closing date for such petitions, which should be sent to NSPE's Washington office, will be January 10, 1955.

Members of the Nominating Committee are: John D. Coleman, chairman, Thomas B. Evans, H. J. Bruegging, Walter P. Henoch, R. K. Rouse, and Walter K. Wagner.

Following are brief biographical sketches of the committee's choices for Society leadership.

ALLISON C. NEFF of Middletown, Ohio, nominee for the NSPE presidency for 1955-56, is a native of Cleveland and a graduate of the Case Institute of Technology from which he received a B.S. in mechanical engineering in 1925.

He began his engineering career as assistant city engineer in East Cleveland. Then he worked as a sales engineer, and later as Cleveland district manager, for The Ohio Corrugated Culvert Company. He joined Armco Drainage & Metal Products, Inc. in 1944 as Ohio sales manager. In the same year he became manager of the firm's Central Division, and in March of 1945 he was promoted to vice president, the position he now holds.

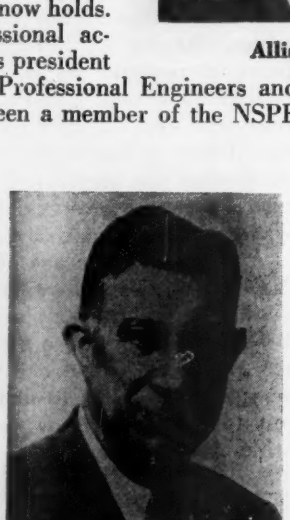


Allison C. Neff

Well known for his professional activities, Mr. Neff has served as president of both the Ohio Society of Professional Engineers and the Cleveland SPE. He has been a member of the NSPE Board of Directors and chairman of both the Ethical Practices and Publications Committees. Currently he is a member of the Unity Committee. He is a member of the Professional Engineers Conference Board for Industry, and The Engineering Society of Cincinnati and an associate member of the American Society of Civil Engineers.

In addition, Mr. Neff is noted for his civic activities. From 1944 to 1946, he was a councilman of the City of Shaker Heights and also a member of the City Planning Commission. He is now a member of the City Planning Commission of Middletown, serving as its president in 1952, 1953, and 1954, and also of the Butler County Planning Commission. He is now chairman of the Middletown Industrial Council, and he has served as vice president of the Ohio Highway & Turnpike Association.

LOUIS F. FRAZZA, the Hawthorne, New Jersey, engineer who has been nominated for a second term as Northeastern Region vice president, is manager of direct sales, Transite Pipe Department, Division Headquarters, Johns-Manville Sales Corporation. He joined the Johns-Manville firm in 1937, following 18 years in the construction and engineering field, specializing in the construction of water supply and sewage systems.

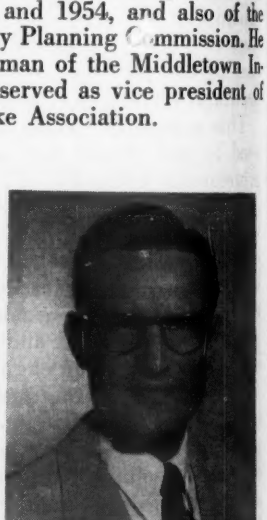


Louis F. Frazza

He is a past president of the New Jersey Society of Professional Engineers, having completed his term of office on June 30, 1953, and is also past president of the Passaic County Engineering Society. Mr. Frazza is a trustee of the North Jersey Water Conference, and he is active in the New Jersey Section of the American Water Works Association, the New Jersey Sewage and Industrial Wastes Association, and the American Public Works Association.

He received his technical education through an I.C.S. course and extension courses at Rutgers University.

WARNER HOWE of Memphis, Tennessee, who has received the vice presidential nomination for the Southeastern Region, is a partner in the firm of Gardner & Howe, Memphis structural engineers. A 1941 civil engineering graduate of Cornell University, Mr. Howe has worked with the U.S. Army Corps of Engineers in a civilian capacity in the Panama Canal Zone, and he also served as a lieutenant, j.g., with a U.S. Navy construction battalion in the Pacific Theater from 1942 to 1945.

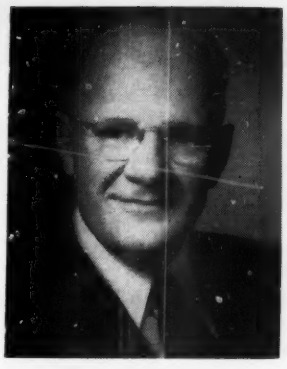


Warner Howe

He was a charter member of the Tennessee SPE and is a past president of the Memphis Chapter. He served as a director of the State Society in 1952, and he is currently serving as an NSPE national director as well as being a member of the Interprofessional Relations Committee.

The Southeastern Region candidate is also an active member of the American Society of Civil Engineers, the American Concrete Institute, the Rotary Club, and the Memphis Engineers Club.

ROBERT J. RHINEHART of Pine Bluff, Ark., nominated for Southwestern Region vice president for a second term, is a Purdue graduate, having received a B.S. in electrical engineering in 1922 and an E.E. degree in 1926. He is a division superintendent for the Arkansas Power & Light Company in charge of transmission and distribution systems in 52 towns.



R. J. Rhinehart

He was an NSPE national director for several terms, and is currently serving as chairman of the Resolutions Committee. He is a member of the Arkansas State Registration Board for which he also served as president for two years. He is chairman of the Uniform Laws and Procedures Committee of the NCSBEE, a past chairman of the Arkansas Section of the AIEE, a charter member of the Kiwanis Club of Pine Bluff, and a past chairman of both the Pine Bluff Planning Commission and Park Commission.

LINDLEY R. DURKEE, candidate for vice president of the Western Region, is the area representative for the Housing and Home Finance Agency in Seattle. A native of Colorado who now makes his home in Mercer Island, Washington, Mr. Durkee is a graduate of Montana State College with a B.S. in A.E. and also holds an honorary doctorate.

Lindley R. Durkee

He has served in the U.S. Navy, has been a construction superintendent for various projects in the Pacific Northwest, and has been in the employ of the Federal Government in charge of various construction programs since 1933.

He is immediate past president of the Washington SPE and also a past president of the Seattle Chapter. Currently Mr. Durkee is serving on the NSPE Board of Directors. He belongs to the Federal Sewage Research Association, the Pacific Coast Board of Inter-Governmental Relations; the American Ordnance Association, the Society of American Military Engineers and many other civic and professional groups.

GARVIN H. DYER of Independence, Missouri, nominated as a candidate for vice president of the North Central Region, has been manager and chief engineer of the Independence Division of the Missouri Water Company since 1947. Previously he was assistant superintendent of the Springfield (Mo.) City Water Company.

Garvin H. Dyer

Mr. Dyer, who received his education through private study and I.C.S. courses, is a past president of the Missouri SPE and has served on its Board of Directors for many years, as well as having been chairman of its Ozark and Western Chapters. He was also a member of the NSPE Board in 1952.

He is an honor member of Chi Epsilon, past president of the Mid-Missouri Section of ASCE, and a former chairman of both the Missouri Section of the American Water Works Association, and the Missouri Water and Sewerage Conference. He received the latter organization's Award of Merit for 1954. He also belongs to various civic and fraternal groups.

VIRGIL E. GUNLOCK, nominated for vice president of the Central Region for a second term, is chairman of the Chicago Transit Board. He is a graduate of the University of Illinois, having earned his B.S. in civil engineering in 1927 with high honors.

Virgil E. Gunlock

He first worked as a structural designer with an Oklahoma City firm. A short time later he moved to Chicago where he has since been associated with municipal engineering activities—as an engineer with the Sanitary District, resident engineer—Chicago subways, engineer of subway construction, chief subway engineer, Commissioner of Subways and Superhighways, and Commissioner of Public Works.

He also served as chairman of Mayor Kennelly's committee to reorganize city departments, and he is deputy director of the Chicago Civil Defense Corps and a member of the Chicago Plan Commission and the Engineering Board of Review.

He is a past president of the Illinois SPE, chairman of NSPE's Legislative Committee, a member of Tau Beta Pi, the Western Society of Engineers, and other technical and civic groups.

RUSSELL B. ALLEN, nominated for an eighth term as treasurer, spent his early years in New Haven, Connecticut, and received his B.S. in Civil Engineering from Yale in 1923. After teaching at Yale, he spent several years with the Boston & Maine Railroad as a construction engineer and two years in private consulting practice. His association with the University of Maryland began in 1933, and he was given the title of full professor in 1945.

Russell B. Allen

Registered in both Maryland and Connecticut, he has been active in the affairs of the Maryland SPE, having served as secretary-treasurer, as president, and as a national director to NSPE.

He is a member of Tau Beta Pi, Sigma Xi, Omicron Delta Kappa, and several other engineering societies, including the American Society for Engineering Education.

Engineers' Week Programs Gain Momentum

"Promotional activities for the 1955 National Engineers' Week are already well under way," Anatole R. Gruehr, national chairman for the Week, has announced.

In a statement to the AMERICAN ENGINEER on the planning at the national level for the February 20-26 event, Mr. Gruehr pointed out that letters to newspaper publishers resulted in several editorials as early as the first part of November calling attention to the contributions made by the engineering profession.

Two major broadcasting networks have requested material for spot announcements to be used during the Week, and letters have come in from newspapers, magazines, and industrial firms throughout the country promising their cooperation, Gruehr said.

The participation of more industrial firms in the progam this year is expected since posters are being mailed to a "hard core" list of 550 firms which employ large numbers of engineers.

The "kick-off" for the 1955 program from the National Society headquarters was the mailing of over 1,000 promotional kits. The kits were sent to state and chapter presidents, secretaries, and Public Relations Committee chairmen.

The kits contain an extensive amount of promotional material to help local engineering groups to utilize the press, radio and TV, speakers bureaus, and special events. A feature of the kits this year is a complete TV script, with photographs, which can be used as a model for the development of similar programs in each community.

The kits also contain extensive sections on the use of newspaper publicity, and a number of sample news release forms.

Chairman Anatole R. Gruehr

The National Society headquarters has received requests for the kits from industrial executives and public relations men.

NSPE state and chapter affiliates have received the first two in a series of National Engineers' Week Action Letters containing suggested programs for local Engineers' Week projects. These Action Letters will continue right up to February and are designed to supplement the material in the kits.

Mr. Gruehr emphasized that all the promotional aids offered by the National Society will be based on the 1955 Engineers' Week theme—"Engineering, Builder of a Brighter Future."

Two 15-minute tape recorded programs for radio use will be offered at cost by the National Society. One is a discussion panel featuring Dr. Walter B. Martin, president of the American Medical Association; Mr. Loyd Wright, president of the American Bar Association; and Clarence T. Shoch, president of NSPE. They will discuss the cooperation of the three professions of medicine, the law, and engineering.

The second program is a dramatized production of the engineering story behind the construction of the USS Nautilus, the world's first atomic powered submarine. It will feature a brief recorded tribute to the engineering profession by Rear Admiral Hyman G. Rickover, brilliant naval engineer who guided the atomic submarine projects.

Cost of the tape recordings, suitable for radio broadcasting, is $6 each.

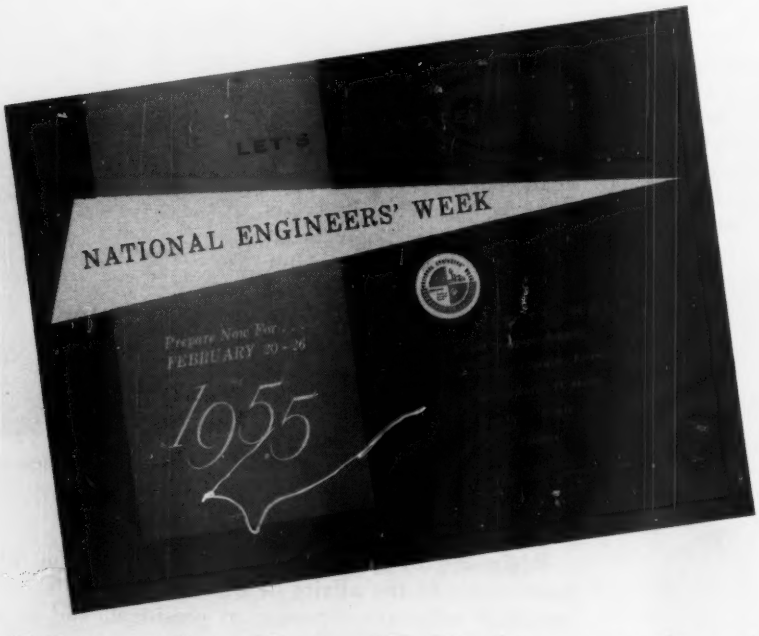
Chairman Gruehr has suggested that all chapters plan a dinner meeting for February 24. If enough chapters can do so, it may be possible to secure national network broadcasting time for a dinner program.

A letter from President Eisenhower stating his recognition of the Week is expected again this year, Mr. Gruehr said. Proclamations from the Governors of most states and the mayors of many cities are also expected.

In addition to the two radio tapes, the National Society is offering a variety of other promotional aids. These include large size posters, banners, two newspaper feature articles prepared on "mats" and ready for immediate insertion, Engineers' Week seals, and logotypes. All items are sold at cost.

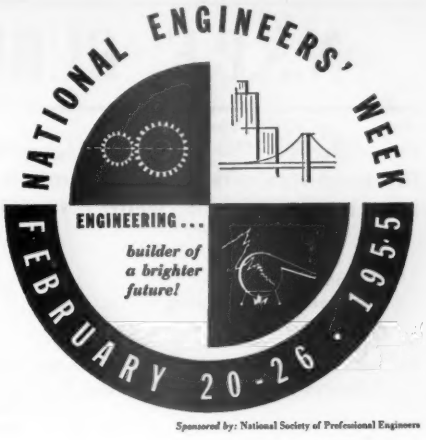
"The response to our requests for cooperation in the 1955 National Engineers' Week program has so far been quite gratifying and suggests that the event will be one of the best in terms of public relations that the engineering profession has ever had," Mr. Gruehr said.

Considerable planning activity at the chapter level this year is indicated by the many letters received at National Society headquarters in Washington outlining local programs, Mr. Gruehr added.



"Let's Promote National Engineers' Week" is the message on this year's kit which has been sent to all member state societies and local chapters. Shown above is the art work on the front of the kit. Inside, busy P.E.'s will find promotional material covering radio and TV, a speakers bureau, newspaper publicity, and special events.

Plan Your Program Now for National Engineers' Week, Feb. 20-26, 1955



Sponsored by: National Society of Professional Engineers

HERE are the ready-made promotional aids that will help your chapter make our 1955 "Week" the biggest ever! All are priced at less than cost and are designed to attract as much public attention as possible. Ordering this material well in advance will help your Engineers' Week committee to make concrete plans now for the chapter's activities in February. Note the handy coupon at the bottom of this page.

1. Newspaper feature article describing the engineering story of the USS Nautilus, the world's first atomic powered submarine. Set in newspaper type and prepared on a "mat." It is ready for immediate insertion in daily or weekly paper. Has photo of Nautilus after launching. Price 50¢ each.

2. Newspaper feature article on impact of engineering on our modern age. Set in newspaper type and prepared on a "mat." Tells how our whole way of life today is dependent on engineers. Photo included. If you have more than one paper in your area you can use both of these "mat" articles. Price 50¢ each.

3. Engineers' Week posters. These attractive 10¼ x 10¼ inch posters containing the 1955 Engineers' Week emblem are fine "attention getters" for bulletin board, window, and other displays. Four given free in kit. Price $4 per 100.

4. Large size Engineers' Week posters. These are 22½ x 22½ inches and carry the same blue emblem as the smaller posters. Perfect for store front window displays, and wall decorations for meeting or banquet rooms. Every engineering exhibit should have one or more of these large posters. Price 30¢ each.

5. Engineers' Week banners. Printed paper banners, 3 feet long by 6 inches wide. May be used with any type of window, lobby, or other exhibit. Calls attention to National Engineers' Week in large, colored type. Good combination to use with the posters. Price 25¢ each.

6. Engineers' Week seals. Use these brightly colored seals on all your mail from now through Engineers' Week. Same design as that used on the posters. Samples included in Engineers' Week kit. They make excellent publicity material for the "Week." Price $3 per thousand.

7. A logotype (metal cut of seal) to insert in advertisements, printed matter, etc. All state society and chapter publications should have one. Can also be used by industrial house organs and other publications. Price $1.50 each.

Two 15-minute radio shows, recorded on tape, are now in the final stages of preparation by the National Society staff. One is the engineering story of the atomic powered submarine, and the other is a discussion panel featuring the presidents of the American Bar Association, the American Medical Association and our own Society president, Mr. Clarence T. Shoch. These tapes will be offered, at cost, to the chapters as soon as possible.

PLEASE CO-OPERATE BY ORDERING YOUR AIDS EARLY

Please Print Name and Address Plainly

National Society of Professional Engineers
1121 Fifteenth Street, N.W.
Washington 5, D. C.

Sirs:

Please rush me items indicated. I enclose a (check.....)
(money order .....) in the amount of $.....
I understand remittance must accompany order.

Name .....

Address .....

City .....**State** .....

☐ 1. .....copies newspaper mat on Nautilus, @ 50c ea.

☐ 2. .....copies newspaper mat on engineering impact, @ 50c ea.

☐ 3. .....(number of) posters, @ $4 per 100.

☐ 4. .....(number of) large posters, @ 30c ea.

☐ 5. .....(number of) banners, @ 25c ea.

☐ 6. .....(number of) seals, @ $3 per 1000.

☐ 7. .....(number of) logotypes, @ $1.50 ea.

N.S.P.E. PUBLICATIONS NOW AVAILABLE

The NSPE publications, as listed, are available upon order. Please use the form below, circling the numbers which correspond to the particular publications. Information on bulk orders of these items may be secured by writing to the Society. Remittance must accompany order.

AVAILABLE AT COST

1. Canons of Ethics
   Suitable for Framing ..... $ .50 ea.
2. Engineers' Creed
   Suitable for Framing ..... $ .50 ea.

*3. How to Attract and Hold Engineering Talent
   Executive Research Survey No. 3, 60 p. ..... $2.00 ea.

*4. How to Improve Engineering-Management Communications
   Executive Research Survey No. 1, 46 p. ..... $2.00 ea.

*5. How to Improve the Utilization of Engineering Manpower
   Executive Research Survey No. 2, 55 p. ..... $2.00 ea.

6. Income & Salary Survey
   1952 statistics covering NSPE members ..... $ .50 ea.
   Non-Members $1.00 ea.

*Published by the Professional Engineers Conference Board for Industry in cooperation with the National Society of Professional Engineers. Use coupon below but make checks payable to the Board.

FREE PUBLICATIONS

7. AMERICAN ENGINEER Articles (reprints)
   a. There's Nothing Wrong With Engineers—
      Dr. Jose B. Calva, P.E.
   b. Professional Organization of Engineers—
      William F. Ryan, P.E.
   c. Needed: A Sure Sense of Values—
      Bernard Baruch
   d. An Engineer's Report on the Future—
      Charles F. Kettering, P.E.
   e. Ethics and the Professional—
      Dean N. W. Dougherty, P.E.
   f. Professionalism or Unionism: Facing the Issue—
      T. Carr Forrest, Jr., P.E.
   g. Should Corporations Practice Engineering?—
      Yes! says Ronald B. Smith, P.E.;
      No! says V. George Terenzio, P.E.
   h. Case for Technology, The—
      Brig. Gen. David Sarnoff
   i. Educating the 1950 Model Engineer—
      Dean S. C. Hollister, P. E.
   j. How a Professional Attitude Can Be Instilled in Engineers—
      Dean W. R. Woolrich, P. E.
   k. Engineering Horizons of Tomorrow—
      T. Carr Forrest, Jr., P. E.
   l. 1-2-3 of Good Speech Making, The—
8. Canons of Ethics
9. Collective Bargaining by Professional Employees
   Statement of policy by NSPE
10. Competitive Bidding for Professionl Services
    Statement of policy by NSPE
11. Development of Natural Resources
    Policy statement by NSPE
12. Engineering—A Career of Opporunity
    Vocational Guidance Pamphlet, 8 p.
13. Engineering Profession in National Security, The
    Statement of policy by NSPE
14. Every Man A Debtor
    Informational pamphlet on NSPE policies and programs suitable for membership promotion, 16 p.
15. Legislative Bulletin
    Published monthly; available to members upon request.
16. List of Accredited Engineering Schools
    Reprint from ECPD Annual Report
17. NSPE Believes:
    a. Why a Professional Society?
    b. Unity for Professional Action
    c. Is our Registration Requirement Limiting Membership?
    d. Our Public Relations Responsibilities
    e. Our Function in Governmental Liaison
    f. The Professional Engineer in Industry
18. NSPE Constitution and Bylaws
19. Next Step—Registration
    Informative pamphlet for engineering students and others on values and procedure for engineering registration, 8 p.
20. Programs for Professional Development
    Four separate pamphlets based on remarks to the 19th Annual Meeting
    a. The Need for More Effective Professional Action—
       Alex Van Praag, Jr., P.E.
    b. The Professional Development of Engineers and Scientists in Industry
       Clark Ransom, P.E.
    c. The Place of Registration in Professional Development—
       Karl B. McEachron, P.E.
    d. NSPE's Development of Professional Objectives—
       Perry Ford, P.E.
21. Recommended Procedure for Negotiating Engineering Contracts
    Policy statement by NSPE
22. Standard Form of Agreement Between Owner and Engineer for Professional Services

USE THIS ORDER FORM TO SECURE PUBLICATIONS 12

TO: NSPE
1121 15th St., N.W.
Washington 5, D. C.

Send me the publications in accordance with the numbers circled below:

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13 14 15 16 17 (a. b. c. d. e. f.) 18 19 20 (a. b. c. d.) 21 22

I enclose (check), (money order), (cash) in the amount of $.....
to cover cost of publications for which a charge is made.

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CITY ..... **STATE** .....

KNOW YOUR SOCIETY— READ ITS PUBLICATIONS

•

PLEASE PRINT ALL INFORMATION

Briefs

(*Continued from page 8*)

Union Miniere du Haut Katanga, the Belgian mining concern which owns and operates the Shinkelobwe uranium mine in the Belgian Congo, has become the first company outside of the United States to join the Atomic Industrial Forum, Inc., according to an announcement made by Walker L. Cisler, president of the Forum and also of The Detroit Edison Company.

* * *

The Portland Cement Association has been presented with the National Safety Council award for outstanding safety performance in 1953. The presentation of the award at the Association's recent annual meeting in Chicago marked the second time Portland Cement's safety program has been so recognized; the Association also received the award in 1951, the first year it was presented.

* * *

Henry J. Campbell, Jr., a professional engineer of New Hyde Park, Long Island, has been appointed to the National Panel of Arbitrators of the American Arbitration Association, according to Whitney North Seymour, president of the organization. Mr. Campbell is head of his own engineering firm and formerly was associated with various heating and air conditioning companies.

Kansas Engineering Society—Annual Meeting. January 20, 21, 1955. Baker Hotel, Hutchinson, Kansas.

NSPE Spring Meeting — February 18, 19, 1955. Hotel Charlotte, Charlotte, North Carolina.

Minnesota Society of Professional Engineers—Annual Meeting. February 23, 24, 1955. St. Paul Hotel, St. Paul, Minnesota.

Tennessee Society of Professional Engineers—Annual Meeting. February 25, 26, 1955. Kingsport, Tennessee.

State Presidents' Conference—March 18, 19, 1955. Allerton Estates, Champaign, Illinois.

NSPE Annual Meeting — June 2-4, 1955. Bellevue-Stratford Hotel, Philadelphia, Pennsylvania.

Professional Engineers...

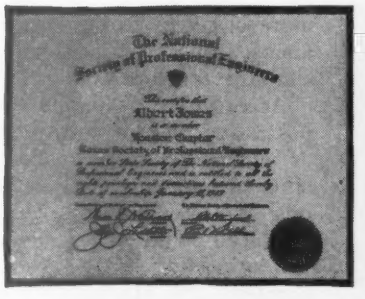
ARE YOU RECOGNIZED BY THIS EMBLEM?

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
FOUNDED 1934

It is a testimonial to professional integrity—characterizing the wearer as a competent professional man, one whose government has faith in his ability to practice his profession. The beautiful gold-on-black emblem is available in three styles as a pin, charm, or miniature lapel button. The official Engineer-In-Training shield is also available in the same styles and at the same prices. See the coupon below.

MAIL THIS COUPON TODAY!

CERTIFICATES AVAILABLE, TOO



If you aren't among the hundreds who have already done so, now is the time to order several membership certificates. They are impressively done with your name, state and, if applicable, your chapter designation. Order certificates for your home and office today. Also available with Engineer-In-Training insigne.

Important: **Emblems and certificates are available only to registered professional engineers and E.I.T.'s who are members of the National Society.**

NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
1121 Fifteenth Street, N. W., Washington 5, D. C.

I am enclosing my check in the amount of $.....for which please send me for Professional Engineers and E.I.T.s

	P.E.	E.I.T.
☐ Certificate No. 1 with Chapter and State designation, priced at $1.50	☐	☐
☐ Certificate No. 2 with State designation, priced at $1.50	☐	☐
☐ Emblem, mounted as a charm, priced at $5.00	☐	☐
☐ Emblem, mounted as a pin, priced at $5.00	☐	☐
☐ Miniature Emblem, mounted on lapel button (⅜"), priced at $2.50	☐	☐

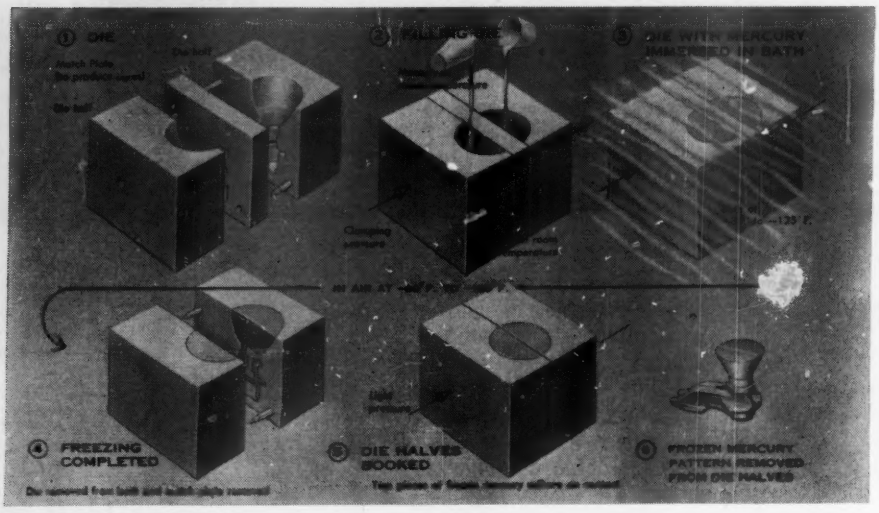
For Professional Engineers Only
☐ P.E. Auto Emblem, $2.50

PLEASE MAIL TO .....
NAME .....NO. .....
STREET .....CITY .....ZONE .....STATE .....
I am a member of the ....Society of Professional Engineers
State
(and if Certificate No. 1 is desired) .....
Chapter

Charms and Pins (exclusive of lapel buttons) engraved upon request

- - - NEW PROCESSES - - -

Investment Casting Feature Offers Refinements



The design of parts possessing far greater complexities is now possible through the frozen mercury process of investment casting because of an important feature known as "booking." This feature permits two or more pieces of frozen mercury to be almost instantly joined with only the slightest pressure.

Accordingly, complex patterns possessing interior coring and gating as intricate as to make them impossible or impractical by other methods, can be easily and economically produced by the frozen mercury process, according to the Mercast Corporation, 295 Madison Avenue, New York.

To accomplish this, the original die may be made in two identical halves, separated as a completed unit by a match-plate that is perfectly smooth on both sides. The two halves are linked with dowel pins extending through the match-plate.

Liquid mercury is poured into the two die halves. When the material is frozen, the die is opened and the match-plate removed. Then, the two sides of the die, aligned by dowels, are placed together, bringing the opposing smooth surfaces of the two halves of the frozen mercury pattern into a perfect face-to-face contact.

When the halves are in contact, a slight squeeze or a gentle tapping against the die is sufficient to cause the frozen mercury to weld its surfaces to unite the two halves into a single monolithic pattern.

"Booking" is not limited to the joining of two frozen sections only; rather, patterns have been made with as many as twelve separate "booking" operations. Thus, single-unit finished castings possessing amazing complexities are easily possible and practical—far beyond the potentialities of any other process.

Because of the large and intricate castings that can be produced, additional cost savings are available since entire assemblies can be purchased as a single unit. Accordingly, savings are realized through the elimination of assembly operations, greatly reduced inventories of many individual parts and the elimination or major reduction of required subsequent machining.

Late and Important

Wage-Hour Law Ruling

A Federal District Court in Iowa has ruled that consulting professional engineering services do not come within the Wage-Hour law.

The Court said that the employees of a consulting engineer who prepare drawings, working plans and specifications, are not within the coverage of the law as being engaged in the production of goods for commerce because the papers on which they work are shipped across state lines.

Full details on this important decision will be carried in next month's issue of the *American Engineer*.

Building Fund Prospectus Mailed To Members

Another step forward in plans for the proposed NSPE Headquarters Building was taken last month with the mailing of the prospectus on the building fund to the Society membership.

It is planned to finance the building through 4% Participation Certificates offered to NSPE members only, and $400,000 has been set as the objective in the building fund drive.

The prospectus gives full details of the financing plan and includes as well a summary of pertinent facts of Society history and an explanation of the headquarters housing problem that led to the decision to build. It also presents a description of the proposed building and a specimen certificate.

At present it seems likely, according to a headquarters staff report, that interested members will be limited to the purchase of one $100 certificate each. This prediction is made on the basis of the great interest expressed in the purchase of certificates by the membership in a poll taken earlier this year. Those who wish to make application for more than one certificate, however, are urged to do so, since if the subscription has not reached the $400,000 goal by December 31, additional certificates will be sold to those desiring them.

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We all know that Philadelphia has made history in the past—but see for yourself the history of tomorrow being made in the Philadelphia of today.

FROM WASHINGTON

By
Milton F. Lunch,
N.S.P.E.'s Legislative Analyst

THE NEW CONGRESS AND ENGINEERING INTERESTS

Someone has suggested that the recent election is like the Bible: "There's something in it for everybody."

Just how much was in it for the engineering profession cannot be said until the deed is done. But on the basis of the election returns and the probable alignment of committee assignments there is some evidence that the legislative interests of professional engineers may be furthered more than harmed.

When the 84th Congress convenes on January 5, 1955, the names well-known in engineering as well as Congressional circles will all be present. Representative Carl Hinshaw of California, a graduate civil engineer and member of several engineering societies, was returned to his seat from California's 20th District. Representative George P. Miller, also from California and also a graduate civil engineer, was re-elected in the 8th District. Representative Augustine B. Kelley, a member of the American Institute of Mining and Metallurgical Engineers, was returned from Pennsylvania's 21st District.

On the Senate side of the Capitol, neither Senator George P. Malone of Nevada, the only registered engineer in the Senate, or Senator Ralph E. Flanders, former president of the American Society of Mechanical Engineers, was up for re-election.

So far as is known, none of the newly-elected members of Congress are engineers or have engineering backgrounds, but this may prove to be incorrect when the detailed biographies of the new members become available.

Committee Heads

It has been said, with much justification, that the most important men in Washington are the chairmen of the Congressional committees. All of these powerful positions will shift to Democratic leaders, many of whom will pick up the same jobs they held previously when the Democrats controlled the 82nd Congress, 1951-52.

The true significance of the effect this change may have on legislation is not so much in party label as in the political and economic philosophy of the particular chairman. It is generally conceded that the real working control of Congressional policy will lie in the hands of a Republican-Democratic conservative bloc. For example, the new chairman of the House Committee on Education and Labor will be Representative Graham A. Barden of North Carolina. He is known as a friend of the Taft-Hartley Act, rather than an advocate of its repeal or drastic amendment. Under his chairmanship it is doubtful that any attempts to drastically revise the labor law in accordance with union demands will get very far in the House. This is so well recognized that there has been some talk of trying to split the committee into two—one to handle educational matters, with Representative Barden as chairman, and the other to handle labor matters with Representative Kelley of Pennsylvania moving up from his second ranking spot into the chairmanship. The theory behind this talk is that Representative Kelley is more sympathetic to labor's viewpoint, but most observers discount the possibility of such a move being successful. Representative Carroll D. Kearns of Pennsylvania is expected to retain his place on the Committee, this time on the minority side, and has indicated he will re-introduce the legislation to give professional engineers greater freedom of association in their relations with management. (Editor's note—see Representative Kearns' article in this issue)

Sen. Hill

On the Senate side the labor viewpoint will have more vigorous advocates. The chairman of the Senate Committee on Labor and Public Welfare will be Senator Lister Hill of Alabama, a critic of the Taft-Hartley Act. Other Democratic members of this key committee generally share the anti-Taft-Hartley view and they may be supported in large measure by one or two Republican members, plus Senator Wayne Morse of Oregon (Independent who will vote with the Democrats), who is expected to recover his seat on the Labor and Armed Services Committees.

(Please turn the page)

(Continued from Previous Page)

President Eisenhower had previously promised to call for some revisions in the labor law and it is expected that he will submit some recommendations despite his party's loss of Congress. However, two major factors stand in the way of drastic revision of the labor law: (1) the dominance of the conservative bloc in the Senate despite the "liberal" make-up of the Senate committee, (2) the pro-Taft-Hartley views of Representative Barden and several other probable Democratic members of the House group.

Manpower and Taxes

A major item for action by the next Congress involves a complete review of national manpower and draft policies. President Eisenhower has given this question the highest priority in his program and Defense Secretary Wilson has announced that the new Administration program is almost complete. The present Selective Service Act expires next June 30 and the Administration is hoping for the adoption of a new program several months before that date.

Sen. Russell

Of major importance to the engineering profession in this connection is what measures will be adopted with reference to deferments for educational activities, graduate study, and particularly with respect to engineers and scientists in key research or industrial positions related to national defense work, who are also in the military reserve. This question has been passed over ever since the end of World War II. The dislocation caused by the call to military service of engineers and scientists during the Korean War period has aggravated the problem and there have been constant demands for a clear Congressional policy.

The key man in this field will be the new chairman of the Senate Armed Services Committee—Senator Richard B. Russell of Georgia. Senator Flanders of Vermont will probably continue his membership on this committee and may be expected to provide an engineering viewpoint when the profession's phase of the problem is reached. Another Georgian—Representative Carl Vinson — will take over the chairmanship of the Armed Services Committee in the House. Representative Miller of California will probably remain on that body, representing an engineering background.

Rep. Cooper

On tax questions—the chairmanship of the House Ways and Means Committee will pass to Representative Jere Cooper of Tennessee. Representatives Eugene J. Keogh and Daniel A. Reed of New York, and Thomas A. Jenkins of Ohio, are expected to stay on this key committee. They were all sponsors in the previous Congress of legislation to permit self-employed persons to set aside a portion of their income on a tax-deferred basis in order to build a private retirement fund. It has been reported that the Administration is now prepared to back such legislation and if this report proves correct it would appear that the House committee members would be prepared to approve the idea.

The Roads Program

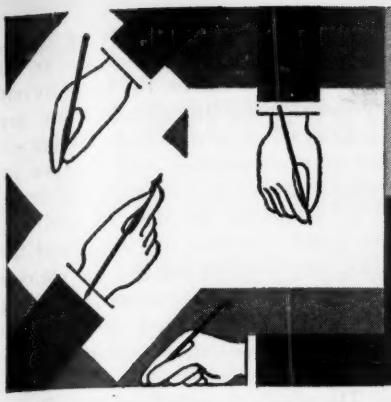
There has been much publicity on President Eisenhower's massive public roads improvement idea. An advisory committee, headed by General Lucius D. Clay, is said to be ready to recommend an even larger program than that advocated by the President. The Public Works Committees, which will handle the legislation for such a program, will be headed by Senator Dennis Chavez of New Mexico and Representative Charles A. Buckley of New York.

There have recently been reports that a major clash may develop between the Democrats and Republicans over this issue in connection with the type of financing. The President's plan presumably will call for the issuance of Government bonds, to be repaid out of Federal gas and oil tax funds. This would remove the necessity for a large Federal appropriation and a probable increase in the public debt. Some Democratic leaders are said to be opposed to this method and will insist upon direct Federal appropriations. The political implications of increasing the public debt are obvious and if the issue develops it could cause a deadlock which would prevent the adoption of the program.

Problems in Power

Another key issue which will be before the Congress again is what to do about authorizing the development of the power potential at Niagara Falls. The contest between the proponents of State Government development and private industry development was fought to "no decision" in the previous Congress. The Public Works Committees will have this question in their jurisdiction again, and this time the odds will favor the State development advocates with Representative Buckley, who was previously opposed to the private development bill, as chairman of the House Committee.

Another controversy in the power field—that of the development of Hell's Canyon by private industry or the Federal Government—will resume. Senator James E. Murray of Montana, who will be chairman of the Senate Interior and Insular Affairs Committee, has announced that he will offer legislation to block private development of the dam site on the Snake River.



Professional POSTSCRIPTS

We're receiving more than Christmas cards in our mailbag these days, and we are happy to pass some of the material along to you via —PP—. Let's lead off this month with two fine editorials from newspapers in the City of Brotherly Love: Philadelphia. The first printed below is from the *Inquirer* and the other from the *Bulletin*. Here they are.

—PP—

American Education Week has been of unusual significance this year because it was perhaps never so clear that the fate of the Nation in the not distant future may depend on the strength or weaknesses of our schools

In this regard particularly the weakness of our schools at the lower-grade levels as well as in the colleges and universities, in the field of science and technology, has suddenly become apparent to many educators who a few years ago scoffed at the idea. The fact is that since 1950 the number of engineers graduating from our colleges has dropped from 50,000 to 20,000. The situation may well be worse in the Nation's high schools, for the tendency to get away from teaching subjects necessary as a background for later advanced scientific or engineering preparation has been growing for two decades.

Moreover, at both levels, the shortage of teachers in scientific subjects is far more serious than in any other field. This is both because it is so easy for adequately prepared persons to get employment at much higher salaries in private industry and because of the public education atmosphere which tends to play down the desirability of science study.

Meanwhile, it is now certain that Soviet Russia is embarked successfully on a program of the exact opposite nature, boosting both the quality and quantity of its training efforts in science and engineering to the point that it is already producing twice as many competent new scientists as this country and will shortly turn out far more.

Americans are accustomed to believing that their schools are the finest in the world. In many ways that is true but they are faced with a challenge today which requires that they do a still better job than ever before.

—PP—

This country has been experiencing for the last few years a deplorable shortage of scientists and engineers. One indication of this is the manner in which industry snaps up students of engineering before they leave the college campus. But in spite of payment of unprecedented high salaries to beginners, the supply is inadequate to meet the demand.

President Eisenhower's attention was called to the situation at his press conference, and he responded by a tentative suggestion for a remedy. He would consider having the Federal Government offer scholarships to competent students to attend outstanding universities. He made it plain he did not think of directing any student to any particular college.

The suggestion will run afoul of those who oppose any Federal aid to education. But the President declared we cannot wait until high salaries to scientists and engineers attract more college students. The situation is urgent now.

It could even become a matter of national defense, since the Soviets are known to be pressing their training programs. This country in great part owes its security to our pre-eminence in applied engineering. We cannot afford to lose it.

—PP—

Dr. D. B. Steinman, P.E., NSPE's founder and first president, is, as well as an outstanding engineer, a poet and writer of ability, and there are two documents on this page to prove it. The poem which appears is by the Doctor and below we print excerpts from a speech he gave before the Michigan College of Mining and Technology. You will enjoy both.

—PP—

. . . The world needs the college-trained minds of men and women in planning and building for the future!

It is the college-trained mind that is equipped for leadership in these days of vexing economic and social problems.

We are living in a rapidly changing world.

More vividly, intensely, and universally than any prior age, our generation has found itself living in a world of rapid and continual change, with the changes coming at increasing urgency and tempo.

An important necessity of life in a changing world is *leadership*. Humanity is troubled, confused, perplexed. We are beset by strange ideologies, class hatreds, political demagogues, pressure groups, official corruption, economic illiteracy, and crooked thinking. Leaders are needed —practical men and women of vision, trained to think straight, to plan, to organize, to direct, to unify, to inspire. Professional men and women, by personality, character, education and life-work, are natural *leaders*. Their straight thinking, their organizing ability, and their leadership are needed—in their professions, in their communities, and in national life. The world has a right to look to professional men for leadership.

In order that college-trained men and women may take their proper place as leaders of their fellowmen, it is important that their educational equipment be broader than the strictly prescribed limits of technology.

The late Dr. Gano Dunn, distinguished engineer and educator, eloquently expressed the need for a broader education for the professional

CHRISTMAS SYMPHONY

By D. B. Steinman, P.E.

On Christmas eve I crossed a bridge
  That links two lands in amity.
No barrier stands across the span;
  Instead my heart rejoiced to see
A portal arch of balsam boughs
  To spell once more, in soft blue light,
The ageless words of peace and hope
  That shepherds heard one starry night.

Afar I heard the church bells ring
  And saw the twinkling lights aglow;
A peaceful gladness filled the air
  As on that night of long ago;
And now, to join the symphony,
  The span and towers, soaring high,
Are like a star-strung frame of song,
  A gleaming harp against the sky.

Both dreams of man invoke the stars:
  The bridge of faith, the prayerful spire,
Both give their anthems to the world,
  To ring out with the heavenly choir;
And as their music thrills my soul,
  I hear the angel-song again,
The blessed tidings of great joy:
  "Peace on earth, good will to men."

man—in these words:

> "If his training neglects the great human mirrors of history and languages; if his heart and mind are insensible to the great social forces; if he but feebly develops the subtle qualities of character that make for personality, his career is limited, no matter how much science he knows."

Professional education, in building for the world of tomorrow, will have to be geared to this requirement of equipping men and women for vision and leadership.

Finally, in a world of flux and confusion, when men are swayed by selfishness and fears, when the finer human instincts are derided and disparaged, and when we see all around us the decay of moral and ethical standards, there is a crying need for men with *ideals*.

A professional career is inherently founded on certain ideals—the ideals of vision, character, honesty, and service to humanity. Professional men and women, by their education and their lifework, are selectively qualified to uphold and exemplify such ideals in their life, in their work, and in their relations with their fellow men.

An important element in life is loyalty. Our lives are shaped by our loyalties—to our family, our friends, our school, our church, our profession, our community, our country—but one loyalty I would place high on the list is *loyalty to our youthful ideals*. Only by loyalty to our ideals can we keep our lives straight. And only by holding to our goal of inspiration can we scale the heights.

In conclusion, there is one thought I want to leave with you. It is summarized in a single word—*consecration*. By that I mean all that goes into the feeling that our works live after us—that we are building not for ourselves but for posterity.

The great master builders who preceded us dreamed their dreams and wrought their dreams—giving health, strength, and even life itself—as the price of achievement. Profiting by our heritage from the pioneers, we are tackling even greater tasks. Whatever we may accomplish will in turn be eclipsed by those who follow after us.

In whatever we do—in whatever we build—beyond the stone and the steel, the calculations and the plans—the one priceless ingredient is the spirit of consecration. That includes the qualities of vision, devotion, inspiration, and integrity.

The whole thought is beautifully expressed in the words of John Ruskin:

"Therefore when we build, let us think that we build forever. Let it not be our present delight, nor for present use alone. Let it be such work as our descendants will thank us for, and let us think, as we lay stone upon stone, that a time is to come when those stones will be held sacred because our hands have touched them, and that men will say, as they look upon the labor and wrought substance of them, 'See, this our fathers did for us.' "

Kearns

(*Continued from page* 12)

gaining and operate on an all-professional basis, or confine the organization only to "employees" and engage in normal collective bargaining. A complete choice would be afforded and neither method would be forced on the organization.

It seems to me that such an arrangement is fair to all interests and does not infringe on the rights of any group. Both the Wagner Act and the Taft-Hartley Act were intended to promote full "freedom of association" and H. R. 5504 was intended to broaden that freedom by recognizing the peculiar problems of the professional class.

THE House Committee on Education and Labor had jurisdiction of the bill along with many others proposed to amend the Taft-Hartley Act in other respects. Our Committee gave careful study to this bill, but before we arrived at any final decisions with respect to amending the labor law, the Senate rejected all changes in the Taft-Hartley law and killed the subject for this year. Hence, there was no point in our Committee continuing its endeavors and H. R. 5504 expired along with the rest of the proposed changes.

Revision of the Taft-Hartley Act, however, is far from a dead subject. Recently President Eisenhower again told the American public that "The Taft-Hartley Act needs some revisions. And again, they will be proposed to the Congress."

This makes it certain that we will be considering Taft-Hartley amendments next year and one of these changes will be the bill I have been discussing. It is my intention to re-introduce the legislation early next year in the Eighty-fourth Congress.

You are convinced by now, I am sure, that the subject matter of our interest is not a simple one readily understandable by busy men who are pressed with many duties and responsibilities. They have relatively little time for each of the thousands of suggestions made to Congress each year. That imposes a responsibility on those who seek certain revisions in the law. You, the engineering profession, must take the initiative in explaining this question to your own professional brethren and by your communications and other media bring your views to the attention of the members of Congress.

My interest and support in advancing the cause of the engineering profession is the result of my sincere conviction that a strong, unified and harmonious engineering profession is indispensable to the welfare of our nation. I know you share with me the conviction that your duty to serve your country by applying your professional talent to a strong and prosperous America comes before any other consideration. In meeting this obligation you will do the most to reflect credit on yourself and your profession.—***End.***

About the Author . . .

Mr. Kearns

Carroll D. Kearns, Republican representative from Farrell, Pa., just re-elected to serve in the Eighty-Fourth Congress, is known as both a musician and an educator as well as a legislator. A native of Youngstown, Ohio, he holds a doctor of music degree from the Chicago Musical College, a B.S. from Westminster College, New Wilmington, Pa., and a master's degree in education from the University of Pittsburgh.

He worked his way through college as a railroader. In addition to his career as a concert artist and an instrumental and choral conductor, and his long experience, both as a teacher and an administrator in the school systems of Chicago, Ill., and Greenville and Farrell, Pa., he has also had experience in the building construction business.

Representative Kearns, who was first elected to Congress in 1946, has received the Chamber of Commerce award for outstanding citizenship, an award from the University of Pittsburgh in recognition of his service to the youth of Pennsylvania, and the American Legion's Distinguished Service Award. He belongs to many civic and educational groups.

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book looks

The Book: **Effective Use of Older Workers**

The Author: **Elizabeth Breckinridge**

The Publisher: **Wilcox & Follett Company, 1255 S. Wabash Ave., Chicago 5, Ill.**

Reviewing the Book: **Dr. Clark A. Dunn, P.E., Executive Director, Division of Engineering Research, Oklahoma A. & M. College.**

"EFFECTIVE Use of Older Workers," written by Elizabeth L. Breckinridge, includes a compilation of information from some 176 companies, as well as opinions and information contributed by some 500 people. Each reader probably will be impressed by different portions of the book, but to me the basic principle established is that any retirement policy should provide flexibility in the same manner that other policies concerned with human relations require flexibility.

One of the factors having to do with a tendency to continue people in employment beyond the retirement age is that percentage-wise, we have a smaller number of people in their late teens and early twenties than would normally occur because of the low birth rate in the 30's.

The book indicates the reasons for industry's concern with the older worker are (1) because of the possibility of labor shortage (2) because the unhappy older worker or retired employee may be a public relations problem (3) because retired older workers may create a situation leading to an increase in the corporate tax rate and (4) because successful business must in general acquire the most efficient work force possible. There is some indication in the organizations surveyed that less strict regulations regarding age limits are being adopted in employment. It is noted that 47 of 74 manufacturing concerns said they had few if any age limits on new applicants.

The principal problem having to do with retirement seems to be the preparation of people for this occurrence.

One retirement procedure that seems to have some merit is to establish a "normal retirement age" and to advise all members of an organization that they should consider it as the probable age of their retirement. There should be some way to utilize people beyond that age, but a specific procedure should be developed by which final retirement is achieved. It appears to be the opinion of many people that administrative personnel should be retired from administrative duties at a more uniform age than hourly employees.

The author presents a number of arguments in favor of the fixed retirement age and, although they are largely negative in character, many appear sound.

Those companies favoring a selective retirement age do not list as many items; however some of the following points might be expressed. The way a man performs rather than an arbitrary age should be a determining factor in whether he is to stay on the job or be retired. Each man should be made to stand or fall on his own unique qualifications and abilities. The individual may not be geared to retirement, either financially, psychologically or mentally at a given age. Of these three, the financial probably is the one of lesser importance. When we bear in mind the varied situations of individuals, and conflicting points of view and interest, it would seem reasonable that if at any time policy should be flexible regarding employment, it should be at retirement to provide an acceptable degree of fairness to each individual.

It is reported that managements having experience with selective retirement policies usually say they have had no substantial difficulty in administering their plans. Under selective retirement policies the older worker may be utilized in one of three general manners. Those are: (1) continuation on his regular job with regular schedule at regular pay; (2) continuation on his regular job with less responsibility—that is in terms of duties, hours and with or without decreased pay; (3) continuation on another job suited to declining ability or interest.

It is apparent that there is a need for considerable analysis to determine factually the desirability of retaining the older workers rather than retiring them. Information such as productivity, absenteeism, accident rate, etc., should be obtained in relation to age groups. Data regarding the cost of retaining a man, with possibly some decrease in production, as compared with bringing in a new worker, training and placing him in the organization, is essential to the administration of a flexible retirement plan.

The transfer of older workers, particularly if it is a downgrading program, is one requiring careful consideration. The survey shows that downgrading of hourly workers is perhaps the least difficult, but the downgrading of executive personnel is extremely difficult. There is a difference of opinion expressed with regard to the retirement of executives. Some insist that executives should be retired at age 65 while others believe that the executive increases his knowledge and wisdom beyond age 65 and that he should be retained at least through that time in his life.

Possibly one of the most important elements that has to be dealt with in the carrying out of any retirement program is an effective counseling program that begins early enough so that the person does not come up for retirement without any preparation either financially or mentally. The counseling programs take many forms—are carried out in some cases by the personnel department, sometimes assisted by the medical department, and possibly individuals outside the company. In these cases the counseling is largely an individual arrangement. Other companies have found group counseling very useful. The goal of a great deal of the counseling is to try and assist the person who is to retire, in finding a means of gaining the satisfactions after retirement that he has obtained in his work with the organization.—**End.**

Meet the Reviewer . . .

Dr. Dunn

Clark A. Dunn, P.E., was born in Stocking, S. D., September 9, 1901. He received a B.S. in C.E. from Wisconsin University, C.E. and M.S. degrees in C.E. from Oklahoma A&M College, and a Ph.D. in C.E. from Cornell University. Since 1945 he has been executive director of the Division of Engineering Research and professor of civil engineering, Oklahoma Institute of Technology, Oklahoma A&M College. He was president of OSPE in 1948. Dr. Dunn is a member of the ASCE, American Society for Engineering Education, Phi Kappa Phi, Sigma Tau and Chi Epsilon, and various civic groups. He is listed in *Who's Who in America.*

N.S.P.E. Believes

ECPD COOPERATION

BY PAUL H. ROBBINS, P.E.

Executive Director

N.S.P.E.

THE Society has long believed that much can be accomplished in advancing the profession through the cooperation of engineering groups on items of mutual interest.

Carrying forward this policy, the Board of Directors, at its Fall meeting in Omaha, urged NSPE's Chapters and State Societies to cooperate with other engineering groups in implementing programs recommended by the Engineers Council for Professional Development. At this meeting, the members of the Board were apprised of developments leading toward closer cooperation between NSPE and ECPD. Joint committees of the two groups are exploring ways and means by which this cooperation may be implemented.

There are several areas of work in the engineering profession in which the combined efforts of ECPD and NSPE can be beneficial. For some years, ECPD has had committees in the fields of guidance, ethics, training, and professional recognition. The studies that have been instituted, the programs that have evolved, and the literature developed, have been of considerable assistance to the engineering profession. Many of these items, to receive their full effectiveness, need to be more widely disseminated among members of the engineering profession, and, in many cases, need to be actively implemented at local and state levels. NSPE's local Chapters and State Societies, in cooperation with other engineers in the areas, can provide the means of implementing the objectives of ECPD to the benefit of the engineering profession.

With this background in mind, the Board adopted a position urging the State Societies and local Chapters to cooperate with other engineering groups, and to take the leadership, where such programs are not yet in effect, in promoting the activities and programs of ECPD. The areas where cooperative activities between NSPE Chapters and the ECPD programs would be most helpful need not be pointed out in detail.

The importance of guidance work at the high school level has been emphasized not only in NSPE literature, but also throughout the engineering profession and the public press. In a great many localities, the NSPE Chapter is the only unit available for assistance in the guidance work for those interested in the engineering profession in the local or regional high schools. The ECPD program and literature on guidance can be of considerable assistance to NSPE Chapters in performing this important service.

The canons of ethics developed by ECPD were recommended to NSPE and its affiliated State Societies shortly after adoption by ECPD. It is believed that NSPE was one of the first to endorse these canons, and these have been the only statement of ethics officially adopted by NSPE. NSPE has reproduced the canons inexpensively and, through its State Societies and Chapters, annually makes copies available to engineering students. Several years ago, the local Chapters and State Societies presented to the engineering schools in their areas framed copies of the canons of ethics for display. In the near future, additional copies for framing will be made available to the engineering schools by NSPE, in cooperation with the ECPD Committee on Ethics.

The ECPD Committee on Training has conducted a pilot project devoted to the first five years of development of the young engineer following completion of his collegiate work. The pilot study in the Cincinnati area has been widely reported in the engineering press, and serves as a model for work which can be done to assist the orientation of young engineers. NSPE has been extremely interested in this phase of young engineers' development and, through its Young Engineers Committee and its current study of the training of engineers in industry, has alerted its Chapters and State Societies to the importance of this early development of young engineers. Certainly, cooperation between NSPE's Chapters, State Societies, and the ECPD program can result only in an improved awareness on the part of all concerned of the importance of this activity.

Little need be said of the importance of cooperative effort in the field of professional recognition. While ECPD's committee has been continually alert to ways and means by which the status of the engineering profession can be improved, NSPE's Chapters and State Societies can give tangible impetus to the studies.

The work of ECPD is of major interest to the profession and NSPE, with its grass-roots organization bringing together engineers in all types of employment and training, can well serve to provide the vehicle by which more effective implementation of the work developed by ECPD can be accomplished. It was this belief which prompted the Board at Omaha to reiterate the policy of the National Society to cooperate with all organizations in the engineering profession in projects in which we have a mutual interest and which we all recognize as contributing to the improvement of the profession.

With Our Members . . .

Civic-Minded Chapters

Pasadena and Los Angeles Groups Sponsor Water Supply Symposium

Well over one hundred members and guests of the Pasadena and Los Angeles Chapters of the California SPE crowded the Pasadena Athletic Club recently to attend a symposium on *Future Water Supply for Southern California.*

The meeting, sponsored jointly by the two P. E. groups, was arranged by Pasadena's president, Robert D. Doepken, and featured six of the State's leading authorities on different phases of water supply. These experts included: Max Bookman, engineer in charge of the Los Angeles office of the State Division of Water Resources; C. C. Elder, chief hydrographic engineer of the Metropolitan Water District; Burton S. Grant, chief engineer of water works, Los Angeles Department of Water and Power; A. M. Rawn, chief engineer and general manager of the Los Angeles County Sanitation District and chairman of the State Water Pollution Control Board; Robert Elliott, meterologist and president of North American Weather Consultants; and James C. De Haven, research engineer for the Rand Corporation.

Dr. Warren O. Wagner, a member of the Pasadena Chapter and a prominent hydraulics consultant, acted as moderator for the discussion, while Pasadena President Doepken presided over the general meeting.

John R. Kocher is president of the Los Angeles Chapter which co-sponsored the event.

East Bay Chapter Sparks Inter-Society Engineers' Week Plans

Under the leadership of the East Bay Chapter of the California SPE, and with the support of the Golden Gate, Peninsula, and San Jose Chapters, the Bay Area Joint Engineers Week Committee has recently been organized. This special committee, which will promote the observance of National Engineers' Week, February 20-26, in the Bay Area, is composed of two representatives of each of the local sections and chapters of the national technological and professional societies.

The group has elected an executive committee to direct its efforts as follows: H. J. Brunnier (CEAC—San Francisco Chapter), chairman; J. E. Philpot (ISA—Northern California Section), secretary; A. S. Nadelle (CSPE—East Bay Chapter), treasurer; and W. Ridgway (AIEE—San Francisco Section), K. F. Baldwin (ASHVE—Golden Gate Chapter), A. S. Sabin (CSPE—Golden Gate Chapter), and J. T. McCarty (ASTE—Santa Clara Valley Chapter), directors.

The California SPE has also adopted a resolution recommending that other chapters consider following the East Bay plan of organizing joint Engineers Week Committees.

New Chapter Formed In Pennsylvania

Announcement has been made of the formation of the twenty-sixth chapter of the Pennsylvania Society of Professional Engineers. The chapter was organized by twenty registered P.E.'s and land surveyors from Elk, Cameron, Warren, and McKean Counties.

The group will be known as the Buck Tail Chapter, taking its name from the famous Civil War "Buck Tail Regiment," which was recruited from the area by General Kane. The soldiers of this regiment wore fur caps with tails, and had a distinguished war record.

Temporary officers elected at the organization meeting were: Robert M. Hulings of Bradford, chairman; Myles J. Sallack of Johnsonburg, secretary-treasurer; and Eugene F. Golla of Emporium, state director.

Hugh M. Nelson of the Erie Chapter acted as chairman of the organization meeting at which PSPE Executive Secretary John T. West explained the objectives and accomplishments of the Society and the advantages of having a chapter in the area. Others assisting in arranging the meeting were: George Van Maldeghem, PSPE vice president; Glen Shorts, state director from the Erie Chapter; and E. J. Smalstig of the PSPE Membership Committee.

Alabama Co-Sponsors Atomic Energy Program

Members of the Alabama Society of Professional Engineers were co-sponsors for and participants in a recent outstanding conference on *Atomic Energy for Industry* that drew many experts from the atomic energy field to the Tutwiler Hotel in Birmingham on October 29. The widely-reported event was presented by The Auburn Research Foundation and the Georgia Tech Engineering Experiment Station; and in addition to the Alabama SPE, the co-sponsors included the National Association of Manufacturers, the Associated Industries of Alabama, and the Birmingham Engineer's Club.

The conference featured two panel discussions — *Now Atomic Energy Can Be Legally Used by Industry* and *Design and Economics of Reactors for Converting Atomic Energy to Peacetime Power.* Taking part in the first panel were Casper W. Ooms, chairman of the Patent Compensation Board, U. S. Atomic Energy Commission, and Bennett Boskey, former deputy general counsel of the AEC. Speakers for the second panel were R. B. Briggs, chief engineer, Reactor Division, Oak Ridge National Laboratory, and J. A. Lane, director of the Reactor Division.

In addition, major addresses were delivered by: J. F. Kaufmann of the AEC Industrial Liaison Branch on *Atomic Energy in World Affairs;* A. F. Rupp, chief of Non-Power Development and Operations, Oak Ridge, speaking on *Non-Power Uses of Atomic Energy;* and E. A. Wiggin, manager of technical information, Atomic Industrial Forum, on *Why Should Industry Want to Use Atomic Energy?*

J. A. McLennan, Alabama SPE president, acted as master of ceremonies at the luncheon during the conference, and Belton Y. Cooper, president of the Birmingham Chapter, introduced Mr. Kaufmann who was the featured speaker at that event.

Leadership Is Topic

Leadership and the Psychology of Leadership was the subject of an address by Frank E. Heikkila, delivered at a recent meeting of the Maumee Valley Chapter of the Ohio Society. Mr. Heikkila, an electrical engineering graduate of Montana State College, is sales manager of the Small Motors Division, Westinghouse Electric Corporation. He is also a former brigadier general in the U. S. Army.

Patrick B. McGinnis Addresses Boston P.E.'s

Patrick B. McGinnis, president of The New York, New Haven and Hartford Railroad Company, was the featured speaker at a recently-reported meeting of the Metropolitan Chapter of the Massachusetts Society.

Approximately 150 members and guests enjoyed dinner at the Boston City Club and heard Mr. McGinnis discuss current problems of the railroad industry. Among the interesting facts he pointed out was that the New Haven is a winding road, making seven complete turns between Boston and New York and thus presenting a problem to railroad manufacturers because cars need to be designed lighter and with lower centers of gravity to take the curves at high speed. He also expressed great confidence in the future of New England but emphasized that more effort should be made to keep the area's technological talent at home.

Charles P. Bridges, chapter chairman, presided at the meeting, while Louis A. Gray, program chairman, introduced the speaker.

Recognition Night In East St. Louis

"Professional Recognition Night" was the theme of a recent meeting held at the Broadview Hotel in East St. Louis, Ill., under the sponsorship of the St. Clair Chapter of the Illinois Society. Civic leaders as well as other engineers were guests of the chapter for the dinner meeting.

Highlight of the meeting was the demonstration and explanation of the "time compressor" by William L. Everitt, dean of engineering of the University of Illinois, co-inventor of the machine with Grant Fairbanks, professor of psychology at the University.

Another guest speaker was Lawrence E. Miller, East St. Louis, director of Civil Defense, who explained the new dispersal plan for the city in case of enemy attack.

Chapter President Arthur J. Feickert presided at the dinner meeting. It is planned to make the event an annual affair.

Clarence Lynn Addresses Erie County Group

Members of the Erie County Chapter of the NYSSPE recently heard Clarence Lynn, executive assistant to the vice president, Buffalo Metering and Control Division, Westinghouse Electric Corporation, speak on the subject, *That Five-Year Period Between Graduation and Practice of the Engineer.*

Approximately 100 members and guests attended the meeting at which Chapter President Franklin S. Helfter presided.

D. C. Engineers Hear Peter Strobel

The Hon. Peter A. Strobel, Commissioner of Public Buildings, was the guest speaker at the November 22nd meeting of the District of Columbia SPE. Members of the Washington Chapter of the American Institute of Architects were also invited to attend as guests of the D. C. Society.

The meeting was held in the auditorium of the Potomac Electric Power Company.

Illinois Valley Chapter Reports Meeting

Paul Boehm of the John R. Cassel Company of New York City was the guest speaker at a recently-reported meeting of the Illinois Valley Chapter of the ISPE. Mr. Boehm lectured on and demonstrated axonometric, or 3-D, drafting.

More than seventy-five members and their guests from the Ottawa, Ill., area attended the meeting.

Fresno Wives Group Plans Social Activities

From a charter membership of seven ladies, the Wives of Professional Engineers, auxiliary to the Fresno Chapter of the California Society, has grown to forty-six active members in the space of just one year, according to a recent report from the group. The ladies held their organizational meeting on October 19, 1953. And during the past year, under the presidency of Mrs. Forrest Taylor, the group has followed a varied social program in addition to assisting the Fresno Chapter itself by taking over such duties as telephoning to remind members of pending professional meetings.

Officers for the current year include: Mrs. Henry Karrar, president; Mrs. Thomas Conley, vice president; Mrs. Eldon Irving, secretary; Mrs. Jack Peddy, treasurer; and Mrs. Samuel Belden, Mrs. James Graham, Mrs. Howard McCandless, and Mrs. Hugh Brewster, directors.

Among coming events scheduled by the ladies are a pot luck supper and a fashion show.

. . . more news on page 35

MEETINGS OF NOTE—The photograph at the left, below, was taken during a recent meeting of the Metropolitan Chapter of the Massachusetts SPE (see story this page). L. to r., are Charles P. Bridges, chapter chairman; Patrick B. McGinnis, president, New York, New Haven & Hartford Railroad, the guest speaker; Lewis A. Gray, Program chairman; Ben Seetoo, chapter vice chairman; and Philip O. Malmberg, secretary.

The picture at the right, made during a recent Middle Eastern District Meeting of the American Institute of Electrical engineers in Reading, Pa., shows, l. to r.: A. C. Monteith of Pittsburgh, AIEE president; F. H. Lichtenwalter, guest speaker for the luncheon session; and Walter B. Morton of Allentown, Pa., AIEE vice president and general chairman of the meeting. Mr. Monteith, Westinghouse Electric Corporation vice president, and Mr. Morton are also members of NSPE.

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Restricted to Registered Professional Engineers . . . Directory Continued on Next Page

R. N. Perkins Dies

Ralph N. Perkins of Omaha, a charter member of the Nebraska SPE and a member-at-large of NSPE before the Nebraska Society was organized, died recently at his home. The 71-year-old mechanical and construction engineer was also known as a biochemist and bacteriologist, and he traveled extensively throughout the country as a consultant on water purification systems.

History Of Engineering Is Lecture Topic

A lecture on *The History of Engineering* was the program highlight at the November 9th meeting of the Central New York Chapter of the New York State SPE. Professor W. P. Hotchkiss of Syracuse University was the featured speaker.

The meeting was held at the Syracuse Museum of Fine Arts.

Joint Meeting in Phoenix

The Hotel Westward Ho in Phoenix, Arizona, was the scene on November 12 and 13 of the Annual Joint Engineers Meeting sponsored by the Arizona Society of Professional Engineers. The two-day program included outstanding social events as well as special sessions for the various participating groups.

Taking part in the conference, in addition to the Arizona Society, were area members of the American Association of Engineers, the American Institute of Electrical Engineers, the American Society of Civil Engineers, the American Society of Mechanical Engineers, the Illuminating Engineers Society, and the Institute of Radio Engineers.

The fall meeting of the Arizona Section of the ASCE was held at the same time and in conjunction with the Joint Meeting, while the other societies held individual business sessions and sponsored other events. The ASME had held a statewide meeting the previous week in Tucson, but many of its members also participated in the Phoenix conference.

Officers of the Arizona SPE, who hosted the two evening social events of the meeting, are: James E. Hastain, president; H. H. Brown, first vice president; John H. Stufflebean, second vice president; Edwin P. Boothroyd, secretary-treasurer; and Walter A. Burg, national director.

. . . *more news on page 37*

PHILADELPHIANS CONFER — In the photograph at the right, Harold L. Bauder (left), president of the Philadelphia Chapter, looks over a program with Colonel Robert J. Fleming, Jr., U.S.A., and Robert V. Hudson, a past president of the chapter.

Colonel Fleming, Philadelphia District Engineer for the U. S. Army Corps of Engineers, was the guest speaker at a recent meeting of the Philadelphia P.E.'s. He lectured on the subject, "The Delaware—An Industrial Lifeline," and afterwards answered questions from the floor with reference to Corps of Engineers projects in the Delaware Valley.

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Engineering Education Is Panel Subject

A recently-reported meeting of the Toledo Chapter of the Ohio Society featured a panel discussion on *Education and the Engineer*. Dr. Asa Knowles, president of the University of Toledo spoke on *Academic Aspects of Engineering* to lead off the panel consideration of the subject.

Others who participated in the discussion were: William Hasselbach, director of engineering, Libbey-Owens-Ford Glass Company; Henry Kerr, vice president, Toledo Edison Company; John Northup, director of engineering, Owens-Illinois Glass Company; and John Richards, partner in Bellman, Gillette, & Richards, architects and engineers.

The Toledo P.E.'s have also recently sponsored a certificate presentation for newly-licensed engineers.

Franklin County P.E.'s Are Meeting Hosts

November 23rd marked the fifteenth Certificate Presentation Meeting sponsored by the Franklin County Chapter of the Ohio Society. The event was held in the New Ohio Union building on the Ohio State Campus in Columbus.

For the occasion the Franklin County P.E.'s acted as hosts to the members of the following chapters—Central Ohio, Eastern Ohio, Hocking Valley, Marion, Muskingum Valley, Ohio Valley, Portsmouth, Southern Ohio, and Zanesville.

. . . more news on page 38

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Certificate Presentation In Cleveland

One hundred seventy-five Ohio engineers who recently passed the State examination received their certificates during a presentation ceremony sponsored by the Cleveland SPE on November 18 at the Cleveland Baptist Association Auditorium.

Judge Donald Lybarger of the Cuyahoga County Common Pleas Court administered the P.E. oath and gave the principal address of the evening. H. G. Sours, member of the Ohio State Board of Registration, presented the certificates.

Galveston County P.E.'s Plan Annual Meeting

The annual meeting of the Galveston County Chapter of the Texas Society of Professional Engineers will take place December 9 at the Jack Tar Charcoal Galley, according to a recent announcement by Ersel G. Lantz, chapter publicity chairman. Installation of new officers of both the chapter and the ladies' auxiliary will be a highlight of the meeting.

Ladies Night In Reading, Pa.

The Reading Chapter of the Pennsylvania Society held its annual Ladies Night banquet on November 10 at the Wyomissing Club. The Rev. Clarence R. Rahn was the guest speaker for the evening.

K. Raymond Titlow is president of the chapter.

Aviation Industry Is Discussed

The Future of Jet Engines in the Aviation Industry was the subject of a lecture given by Robert L. Wells at a recent meeting of the Western Chapter of the Missouri SPE. The meeting, which was preceded by a social hour and dinner, was held at the Wishbone Restaurant in Kansas City.

Panel Discussion At Rockford Meeting

Engineer! Know Thyself! was the general title given to a panel discussion featured at the November 15th meeting of the Rockford Chapter of the Illinois SPE. The specific subjects and speakers for the panel were: *What Do We Mean by "Professional?"*—Arnold Lundgren; *Earmarks of a Professional Engineer*—Henry Riedesel; *An Accountant's View of Engineers*—E. S. Bradley; *Is Engineering a Profession?*—Warner Johnson; and *Trends in the Engineering Profession*—R. E. Johnson.

Lyle Porter served as moderator for the general discussion that followed the panel presentation.

Westchester County Holds 26th Dinner

Five hundred chapter members and guests attended the 26th annual dinner given at the Glen Island Casino, New Rochelle, N. Y., on November 10, 1954, by the Westchester County Chapter of the New York State SPE.

The affair was in honor of Richard M. McLaughlin, chapter past president and Director of the Sanitation Bureau, Westchester County Department of Health.

President Charles W. Ryan welcomed the guests and introduced Edward H. Carr, general operating manager of the Consolidated Edison Co., Westchester, who was toastmaster of the evening.

Honored guests who were introduced during the dinner included: Edward P. Prezzano, chairman of the Board of Directors of the Westchester Bank and Trust Co.; Stanley Church, Mayor of the City of New Rochelle; and the officers of the New York State Society of Professional Engineers—Thomas M. Linville, president; Herbert F. Roemmele, first vice-president; Lewis J. Sforzini, second vice-president; Richard B. Richardson, financial secretary; and Ernest F. Fox, financial secretary emeritus.

Chapter President Ryan was committee chairman for the dinner with sub committees headed by Vincent G. Terenzio, Max Vogel, George T. Baer, Joseph A. Brady, and Fred U. Martelon.

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Personalities . . . Promotion of NORMAN LIEBLICH to the post of vice president of KIELEY & MUELLER, INC., Middletown, N. Y., has been announced by JOSEPH O' CONNOR, company president. . . . ARTHUR S. LOCKE of Washington, D. C., has been appointed associate director of the West Orange, N. J., laboratory of VITRO CORPORATION OF AMERICA, according to an announcement by G. RUSSELL TATUM, general manager of the Vitro Laboratories Division. . . . New staff appointments at STONE & WEBSTER ENGINEERING CORPORATION, Boston, include the naming of B. C. MALLORY as consulting engineer and T. A. FEARNSIDE as chief mechanical engineer. . . . Appointments of LOWELL CONRAD as director of engineering and RAYMOND H. BOWMAN as chief engineer of the Engineering Section have been announced by CLARENCE E. KILLEBREW, vice president of the Construction Machinery Division of CLARK EQUIPMENT COMPANY, Benton Harbor, Mich. . . . T. KENNETH HAVEN has been named vice president of the DETREX CORPORATION of Detroit. . . . HAROLD MAZZA has been appointed assistant director of research for AMERICAN POTASH & CHEMICAL CORPORATION, Trona, Calif., according to D. S. DINSMOOR, vice president in charge of research and development.

Mr. Lieblich

Appointment of RONALD D. GUMBERT of Cleveland as a vice president of the MERCAST CORPORATION, New York City, has been annouced by ADMIRAL ALAN G. KIRK, chairman of the board. . . . RAYMOND H. MATTHEWS has been named chief engineer of FENWAL INCORPORATED, Ashland, Mass., manufacturer of precision thermostats, temperature controllers and fire and overheat detectors. . . . R. D. MERRILL has been promoted to the new position of director of engineering for STONE CONTAINER CORPORATION of Chicago, according to MARVIN N. STONE, vice president in charge of production. MATTHEW J. DELEHAUNTY has been named manager of mechanical goods sales for the Mechanical Goods Division of UNITED STATES RUBBER COMPANY. He will make his headquarters at the firm's Passaic, N. J., plant. . . . HAL H. HALE of Washington, D. C., will join the ASSOCIATION OF AMERICAN RAILROADS as assistant to the vice president—highway transportation, effective January 1. . . . CHARLES G. HUGUS, JR., has been elected vice president of L. B. FOSTER COMPANY. He will continue in the New York City office in his new capacity.

Mr. Matthews

The appointments of JAMES P. STEIBEL as manager of research and development and of LOGAN H. CASHMEN as purchasing agent have been announced by ROBERT HAMILTON, president of DUMORE PRECISION TOOLS, Racine, Wis. . . . G. DONALD KENNEDY has been elected president of the PORTLAND CEMENT ASSOCIATION, Chicago, succeeding the retiring CARL D. FRANKS. . . . EDWARD PADLO, mechanical engineer, and ARTHUR G. FORSTER, electrical engineer, have joined the staff of HOOKER ELECTROCHEMICAL CO., Niagara Falls, N. Y. . . . NICHOLAS C. JESSEN has been named assistant superintendent of the Barberton, Ohio, works of THE BABCOCK & WILCOX COMPANY'S Boiler Division. . . . WILLIAM A. RUTHERFORD, landscape architect, has joined the office of A. CARL STELLING, New York, site planning consultants. . . . The WISCONSIN STATE HIGHWAY COMMISSION has named ALBERT T. BLECK assistant state highway engineer; STRATTON E. HICKS, engineer of construction; and WILLIAM F. STEUBER, chief of public information.

Mr. Kennedy

Contract Awards . . . PALMER & BAKER, Mobile, Ala., engineering firm, is extending its operations on an international scale, having been awarded contracts for preliminary studies in building vehicular tunnels in Sweden and Cuba, according to WAYNE F. PALMER, president. . . . TOWNSEND COMPANY of New Brighton, Pa., has awarded the general contract for constructing the first segment of its new plant at Ellwood City, Pa., to MELLON-STUART CO., Pittsburgh contracting engineering firm.

Reorganizations and Changes . . . ROY M. HENWOOD ASSOCIATES, consulting engineers, have announced the consolidation of the firm's offices, formerly located in New York City and Newark, N. J. The firm's new headquarters is in the Hudson County National Bank Building, Hoboken, N. J. . . . PRESSED STEEL CAR COMPANY, INC., of New York City has changed its name to U. S. INDUSTRIES, INC., in line with the company's more diversified activities. . . . WILLIAM S. WHEELER, president and board chairman of WHEELER ASSOCIATES, INC., Cleveland, has announced that R. PAT CROUCH, president of CROUCH ASSOCIATES of Cleveland, has affiliated his firm with the Wheeler organization of industrial and management consultants. Mr. Crouch, whose firm specialized in operations research, will head the OR Department in this new connection.

New Firms . . . W. LINDSAY SUTER and HAROLD F. SOMMERSCHIELD have announced the formation of a partnership for the practice of architecture and engineering. The new firm, SUTER AND SOMMERSCHIELD, will have offices at 39 S. La Salle Street in Chicago. . . . Formation of CAMPBELL ENGINEERING COMPANY with offices at 9320 Michigan Ave., Detroit, is annouced by CHARLES C. F. OWENS, THOMAS J. F. PAPEZ, and CHARLES C. WIEDER who will be partners in the new concern. The company offers general industrial, commercial, and institutional building design service. . . . Combining the resources of the HAMMOND IRON WORKS of Warren, Pa., KITTELL MUFFLER AND ENGINEERING CO., and LACY MFG. CO., of Los Angeles, the KITTELL-HAMMOND COMPANY has been formed to design and construct noise reduction facilities for installation east of the Mississippi River. Main offices of the new company are located in Warren, Pa.

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Letters

(*Continued from page* 5)

Economics . . .

Dear Editor:

The views of Mr. W. B. Jarzembski of Tulsa, Okla., and those of Mr. A. R. Jackson of Houston, Texas (Professional Postscripts, August, 1954) are both interesting and informative. They deserve credit for expressing their opinions. The great weakness in every organization is that too many of its members either do not know how to express their opinions or are too lazy to do so. Many people believe that engineers do not know how to express their opinions in a creditable manner. Your publication is an opportunity for us to prove otherwise.

In that narrow field which constitutes the domain of economics manpower seems to be a commodity. The real value of a commodity will always be governed by the law of supply and demand. Supply increases with demand and ebbs with the lack of it. Thus we have a natural law to take care of the shortage of engineers, if such a shortage exists. No propaganda is needed.

Perhaps we are confusing the need for pure scientists with the supply of practical engineers. The pure scientists seek knowledge for the pure love of truth. Practical engineers are in the field for what they can get out of it. They have something to sell, and the price is always better in a seller's market. The pure scientists have something to give. They are in demand!

The NSPE is no substitute for an organized labor union. It is not a means to promote, solely, the material welfare of its members. Neither should it be a medium for misleading starry-eyed youth. It should be an organization for those who are fascinated by the opportunities which nature offers for the satisfaction of the material wants of all men.

Many men are qualified to do engineering work. Those who follow the profession should strive to put all they can into it. They are surely entitled to a decent living for themselves and their families while so doing it. Those who do not follow the profession, but have the capacity of appreciating it, should encourage those who do so.

PETER A. SEWARD, P.E.,
Swampscott, Mass.

NSPE to NSP?

Dear Editor:

The movement for unity in the engineering profession is progressing. Many of us desire that professional unification, including the welding together of the technical professional societies, would proceed more rapidly. The writer sees various trends which indicate that more and more the NSPE is furnishing, and is expected to furnish, the leadership for this movement.

Part of our problem is public recognition of our professional status. Shakespeare wrote ". . . he that filches from me my good name robs me of that which not enriches him and makes me poor indeed." The good name of "engineer," in the professional sense, is being stolen. Or, perhaps, we never possessed it from the beginning. This can be verified in daily experiences. The newspapers headline that "Engineers To Strike," and we read that locomotive engineers are the subject of the article. Or, "Engineers Shut Down Job," and we read in the article that hoisting engineers are involved in a jurisdictional dispute. Is it not time that we abandon this out-worn and ambiguous name?

Considering the American Medical Association, who have made great professional strides over the years, we find that M.D.'s are listed in the telephone directories as Physicians and Surgeons M.D. This listing is of first importance; secondary is the listing under "Oculists" or some other field of specialization. Although these members are courteously addressed in conversation as "Doctor" we should note that the medical profession encourages the use of the words "physician" and "surgeon." Long ago, these members have succeeded, in the minds of the public, in differentiating between "medical doctor" and such terms as "horse doctor," "witch doctor," and so on. Note particularly that this has been achieved by focussing attention on a *different* word. The A.M.A. has wisely abandoned any attempt to publicize "medical doctor" in order to distinguish themselves from other types of "doctors." It is the writer's belief that we need to establish a better name than "professional engineer" to separate our members from the locomotive, hoisting, and service engineers. The abbreviation "P.E." should be continued, as the term "M.D." is now used, but a new name is needed for ordinary conversation and for the education of the public. For effectiveness, this new term should be one word, no longer than the word "physician."

Annual Meeting Chairmen . . .

To list your meeting under "Dates to Remember," send complete information (date, hotel, city) direct to the American Engineer as soon as it is scheduled.

Can the public be educated to the use of a new word? Experience indicates an affirmative answer. Illustrations can be cited, such as "drive-in," "realtor," and "neoprene." All that is needed is strong effort plus time. Surely the accomplishment of distinction in the public mind, to set apart *professional* engineers, is a compelling objective if we are to achieve our goals.

After rejecting many combinations of parts of the words "registered," "professional," and "engineer," a simple combination was found which is no longer than "physician." This new word is simple, easy to pronounce, and is readily identified with "professional engineer." It is *progineer.*

Thus, the N.S.P.E. could be modified to the National Society of Progineers, or N. S. P. In time, after unity with the various technical societies is finally achieved, use of the new word could be extended to those fields of professional specialization. The A.I.E.E. could become the American Institute of Electrical Progineers, as an example.

Immediately, the cautious and discerning reader will visualize many problems to be solved in this evolution. But the planners of the original thirteen colonies also foresaw many problems. These problems were met head-on as they came within grasp, and the movement of 1776 has carried forward. Our movement can become more vigorous and aggressive as we become more interested and enthusiastic. Comments from other readers on this suggestion to publicize the word *progineer* would be welcomed. If a definite favorable interest becomes evident, it would seem that this subject should be brought to the attention of the proper committee of N.S.P.E. for continued attention and decision.

W. J. ROA, JR., P.E.,
Kirkwood, Missouri

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NEW PLYWOOD CONTAINER BOOKLET—A new fully-illustrated booklet on plywood shipping containers has been announced by Atlas Plywood Corp. Containing twenty-four pages, the booklet describes important manufacturing processes, showing how plywood shipping containers are engineered to give maximum protection to customer products. Request from: Atlas Plywood Corp., 1427 Statler Bldg., Boston 16, Mass.

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BOOKLET ON REFRACTORY SELECTION—Basic Refractories, Inc., announces a new twelve page illustrated booklet, "A Guide For Refractory Selection." The booklet discusses nomenclature generally applied to the various classes and types of granular refractories, outlining their characteristics and properties. Applications in both open hearth and electric steelmaking furnaces are covered, as well as gunning and ramming techniques. Copies from: Basic Refractories, Inc., 845 Hanna Bldg., Cleveland 15, Ohio.

—AE—

CONTROLLED VOLUME PUMPS—A Bulletin, 1253, released by the Milton Roy Company describes and illustrates how Controlled Volume Pumps can be used as flow controllers, ratio controllers and final control elements in process instrumentation. Copies of the Bulletin 1253 are available, free of charge, from: Milton Roy Company, Station Y, 1300 East Mermaid Lane, Philadelphia 18, Pa.

PRECISION TIMING CATALOG—A new and exhaustive catalog of precision timing instruments for industry, engineering and research has just been published by M. Ducommun Company. Makers of Minerva precision timing instruments. Construction difference is presented visually. 44 Minerva time pieces are shown, in addition to the Minerva "Stop-Watch-Man" for holding a Stop Watch in action, and the Curvimeter for scaling blueprints. Time pieces include Stop Watches designed for every purpose, from 5ths of a second to hundredth second timers and a Calendar Chronograph. Catalog available from: M. Ducommun Company, 580 Fifth Avenue, New York 36.

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NEW COOLING TOWER BULLETIN—"Cooling Water for Industry," one of the most detailed explanations ever written of cooling tower construction and applications, has been issued by The Fluor Corp. The two color, 36-page, publication, designated as CT-ID-0.002, provides a description of Fluor induced-draft cooling tower construction. Profusely illustrated, shows the detail of structural and mechanical equipment and will be of particular interest to those with heat dissipation problems. Write: The Fluor Corp., Ltd., 2500 S. Atlantic Blvd., Los Angeles 22, Calif.

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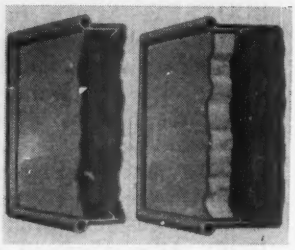
NEW CURTAIN-WALL PANEL — Item 1



The Davidson "Double-Wall" Panel of porcelain, for use in any fenestration or spandrel system of curtain-wall design, is announced by Davidson Enamel Products, Inc., Lima, Ohio. Two types, Type A in sizes up to 12 sq. ft., 1½" to 3" thick. Has fiber-glass insulation and provisions which allow the wall to "breathe." Type C Panel is in sizes up to 20 sq. ft., minimum thickness of 2⅛", also has a special shrink-proof, gypsum-base Vitrock backing, cast integrally with the outer panel for "straight-edge" flatness, rigidity and additional insulation.

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SMALL HOME AIR CONDITIONER — Item 2

A new self-contained, air-cooled unit for the moderate priced home has been announced by Shana Manufacturing, Inc., Chicago. The new SHANA unit is said to be ideal for smaller, inexpensive homes (even those with hot water or steam heat), and overcomes the usual "water problem" with less costly installation. Delivers 16,500 B.T.U.'s at ASRE conditions. Operates efficiently at high outside ambient temperatures. Completely self-contained—no refrigeration pipe to run; no water required; factory pre-wired; all in one cabinet—including compressor, coils, etc. Compact, lightweight (29" x 48" x 19¼").

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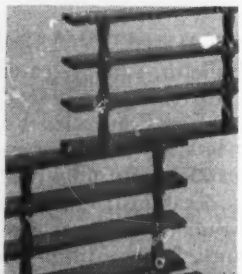
SAFETY GRATING — Item 3



A new combination of safety factors have been built into one of Blaw-Knox Company's newest products — Furro-Grip — an electro-forged grating for use in areas where service conditions are likely to include skid hazards. Knurled bearing bars are combined with twisted crossbars, providing a smoother walking surface than serrated bars and an extra margin of safety over square bar grating.

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WRITES ON ALL SURFACES — Item 4

A new all-purpose laboratory marking tool is now available from Palo Laboratory Supplies, Inc., New York. Called "Tech-Pen," this modern ball-point pen writes with clear, brilliant, opaque ink on virtually any surface—glass, metal, porcelain, paper, plastic, cloth, leather, etc. Its completely permanent ink resists washing, weathering, rubbing, acids, alkalies, alcohol, autoclaving, and temperatures up to 500° C. (with one color, red, resisting temperatures up to 1000° C.). Yet markings are easily removed, when desired, with common solvents. Available with Red, Yellow, Blue, Green, Orange, Black, or White ink.

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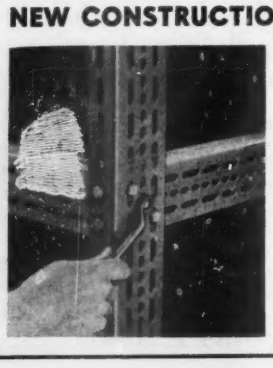
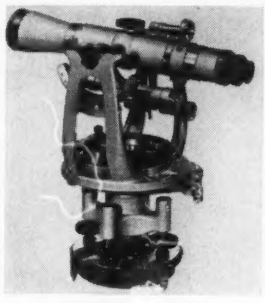
NEW CONSTRUCTION SYSTEM — Item 5



Trade-marked FLOWSTRUT, a new construction system enables the immediate construction of a variety of industrial requirements from workbench to warehouse. Drilling, welding and riveting are eliminated, and a wrench and cutter are sufficient tools, according to Flowstrut Corp., N. Y. Basic components are slotted steel angle bars of 14-gauge steel, which can be bolted together in many combinations. Supplied in lengths of 12 ft., pre-drilled with 40 bolt holes per ft., marked for cutting at ¾-inch intervals; achieve rigid joints and accurate sizing. Can be altered when necessary, or dismantled.

This column describes new products of general interest to professional engineers. For further information, fill in the coupon provided and mail to the AMERICAN ENGINEER.

NEW WARREN-KNIGHT TRANSIT-LEVEL — *Item 6*



The new (1955 Model) Warren-Knight Transit-Level looks and is operated like a Transit but retains the exclusive feature of being adjusted like a Wye Level. Features include 24-power internal focusing telescope; coated optics; sealed-in objective; larger eyepiece cap; larger vertical arc; crosswires on glass reticle; nylon bearing for focusing pinion; one piece, U-shaped standard and top plate; steel center; covered leveling screws; solid, heavily reinforced horizontal limb; vernier opening covered; nylon leveling screw heads; bronze and black finish, and sturdier tripod.

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INCREASED LIFE FOR COIL INSULATION — *Item 7*

A new coil insulation with 50 per cent longer life is now available on General Electric induction motors of 100 to 3,000 hp rating, according to the Medium Induction Motor Department. Described by G-E engineers as the most significant development in form-wound insulation in 50 years, the new Polyex insulation increases dielectric strength by 50 per cent and mechanical strength by 600 per cent. Utilizing DuPont Mylar, Dacron, and synthetic hydrocarbon resin, Polyex insulation is the first complete change in large motor insulation since the turn of the century.

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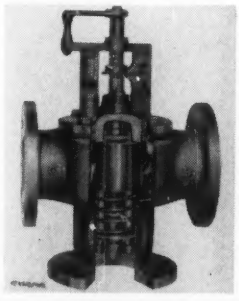
UNUSUAL THERMOSTAT IN NEW VALVES — *Item 8*



Temperature regulators containing a new-type thermal element have been developed for use on internal combustion engines and other temperature control applications by the Fulton Sylphon Division of Robertshaw-Fulton Controls Co. The new regulators, supplied with three-way valves, contain an unusual Power-Pill unit, which is charged with a solid, wax-like compound. When heated, the compound melts and expands, generating an extremely powerful force by comparison with older thermostatic units. Returns to a solid state upon cooling.

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CERAMIC-LIKE PROTECTIVE COATING — *Item 9*

CeramiSeal is a new ceramic-like compound by Roc-O-Lite Corp., Chicago, which can be applied by brush, spray or trowel. Packaged as a dry white powder. Cement or oil colors of all shades and tones are easily added. Dries to form a dense, monolithic film which, in addition to excellent decorative qualities, is said to afford protection against fire or water penetration. CeramiSeal makes a strong patching, resurfacing, crack-fillling and cementing compound for renovating buiding exteriors, moisture-proofing basements, coating dry-wall partitions, and can be used for casting or molding.

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AUTOMATIC-FEED DRAWING PEN — *Item 10*

Designed along traditional lines, the Rule-O-Matic Holder contains an ink cartridge holding the equivalent of 55,000 inches of ruled lines. The ink (prepared by Artone Color Corp.) is government approved India ink, meeting highest technical standards, according to Rule-O-Matic Corp., N. Y. To fill the nib, just press the cap. A concealed feed-tube is activated, releasing the exact amount of ink needed to fill the nib. Nibs are of rustproof stainless steel, precision honed for quality.

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But why MEN over 45?

Our doctors still don't know *why*, but if you are a man over 45 you are six times as likely to develop lung cancer as a man of your age twenty years ago. They *do* know, however, that their chances of saving your life could be about *ten times* greater if they could only detect cancer long before you notice any symptom in yourself. (Only 1 in every 20 lung cancers is being cured today, largely because most cases progress too far before detected.) That's why we urge that you make a habit of having your chest X-rayed every six months, no matter how well you may *feel*. The alarming increase of lung cancer in men over 45 more than justifies such precautions. Far too many men die needlessly.

Our new film "The Warning Shadow" will tell you what every man should know about lung cancer. To see this film and to get life-saving facts about other forms of cancer, phone the American Cancer Society office nearest you or simply write to "Cancer"—in care of your local Post Office.

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